

Sequence Listing

- <110> Ashkenazi, Avi J.
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 Goddard, Audrey
 Godowski, Paul J.
 Grimaldi, J. Christopher
 Gurney, Austin L.
 Kljavin, Ivar J.
 Napier, Mary A.
 Pan, James
 Paoni, Nicholas F.
 Roy, Margaret Ann
 Stewart, Timothy A.
 Tumas, Daniel
 Watanabe, Colin K.
 Williams, P. Mickey
 Wood, William I.
 Zhang, Zemin
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 tcaagcagaa gagagataag ttgatgtcca tgagaaagga tatgaggact 1150
 aaacagatac aaaatatgga gcagaaagga aaaccactg gggaggtaga 1200
 ggaaatgaca gagaaaccag aaatgacagc agaggagaag caaacattac 1250
 taaagaggag attgcttgca gagaaaactca aagaagaagt tattaataag 1300
 taataattaa gaacaattta acaaaatgga agttcaaatt gtcttaaaaa 1350
 taaattattt agtccttaca ctg 1373

<210> 8
 <211> 367
 <212> PRT
 <213> Homo sapiens

<400> 8
 Met Ala Ala Glu Glu Glu Asp Glu Val Glu Trp Val Val Glu Ser
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 Ile Ala Gly Phe Leu Arg Gly Pro Asp Trp Ser Ile Pro Ile Leu
 20 25 30
 Asp Phe Val Glu Gln Lys Cys Glu Val Asn Cys Lys Gly Gly His
 35 40 45
 Val Ile Thr Pro Gly Ser Pro Glu Pro Val Ile Leu Val Ala Cys
 50 55 60
 Val Pro Leu Val Phe Asp Asp Glu Glu Glu Ser Lys Leu Thr Tyr
 65 70 75
 Thr Glu Ile His Gln Glu Tyr Lys Glu Leu Val Glu Lys Leu Leu
 80 85 90
 Glu Gly Tyr Leu Lys Glu Ile Gly Ile Asn Glu Asp Gln Phe Gln
 95 100 105
 Glu Ala Cys Thr Ser Pro Leu Ala Lys Thr His Thr Ser Gln Ala
 110 115 120
 Ile Leu Gln Pro Val Leu Ala Ala Glu Asp Phe Thr Ile Phe Lys
 125 130 135
 Ala Met Met Val Gln Lys Asn Ile Glu Met Gln Leu Gln Ala Ile
 140 145 150

tggtgtatta cctgactgct taaccgatgg ctctgatgtg gtcagtgacc 350
 ttgaacacga agagatgaaa atcctgaggg aagttcttag aaaatcaaaa 400
 gaggaatatg accaggaa 418

<210> 10
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 10
 ttgacctata cagagattca tc 22

<210> 11
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 11
 ctaagaactt ccctcaggat ttt 23

<210> 12
 <211> 40
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 12
 atgaagatca atttcaagaa gcatgcactt ctctctttgc 40

<210> 13
 <211> 2886
 <212> DNA
 <213> Homo sapiens

<400> 13
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 ctatacctac tgtagcttct ccacgtatgg accctaaagg ctactgctgc 100
 tactacgggg ctagacagtt actgtctcag ctctaggatg tgcgttcttc 150
 cactagaagc tcttctgagg gaggtaatta aaaaacagtg gaatggaaaa 200
 acagtgtgt agtcctctg taatatgctc cttgtcaaca atgtatacat 250
 tcctgctagg tgccatattc attgctttta gctcaagtcg catottacta 300
 gtgaagtatt ctgccaatga agaaaacaag tatgattatc ttccaactac 350
 tgtgaatgtg tgctcagaac tggatgaagct agttttctgt gtgcttgtgt 400
 cattctgtgt tataaagaaa gatcatcaaa gtagaaattt gaaatatgct 450

tcctggaagg aattctctga ttcatgaag tgggccattc ctgcctttct 500
 ttatttcctg gataacttga ttgtcttcta tgcctgtcc tatcttcaac 550
 cagccatggc tggtatcttc tcaaatttta gcattataac aacagctctt 600
 ctattcagga tagtgctgaa gaggcgtcta aactggatcc agtgggcttc 650
 cctcctgact ttatttttgt ctattgtggc cttgactgcc gggactaaaa 700
 ctttacagca caacttggca ggacgtggat ttcacacga tgcctttttc 750
 agcccttcca attcctgcct tcttttcaga agtgagtgtc ccagaaaaga 800
 caattgtaca gcaaaggaat ggacttttcc tgaagctaaa tggaacacca 850
 cagccagagt ttccagtcac atccgtcttg gcatgggcca tgttcttatt 900
 atagtcaggt gttttatttc ttcaatggct aatatctata atgaaaagat 950
 actgaaggag gggaaccagc tcaactgaaag catcttcata cagaacagca 1000
 aactctattt ctttggcatt ctgtttaatg ggctgactct gggccttcag 1050
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 tgcattttca gtagccctta tttttgtaac tgcattccag ggcctttcag 1150
 tggcctttcat tctgaagttc ctggataaca tgttccatgt cttgatggcc 1200
 caggttacca ctgtcattat cacaacagtg tctgtcctgg tctttgactt 1250
 caggccctcc ctggaatttt tcttggaagc cccatcagtc cttctctcta 1300
 tattttattt taatgccagc aagcctcaag ttccggaata cgcacctagg 1350
 caagaaagga tccgagatct aagtggcaat ctttgggagc gttccagtgg 1400
 ggatggagaa gaactagaaa gacttaccaa acccaagagt gatgagtcag 1450
 atgaagatac tttctaactg gtaccacat agtttgcagc tctcttgaac 1500
 cttattttca cattttcagt gtttgaata tttatctttt cactttgata 1550
 aaccagaaat gtttctaaat cctaattatc tttgcatata tctagctact 1600
 ccctaaatgg ttccatcaa ggcttagagt acccaaaggc taagaaattc 1650
 taaagaactg atacaggagt aacaatatga agaattcatt aatatctcag 1700
 tacttgataa atcagaaagt tatatgtgca gattattttc cttggccttc 1750
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 acatagagat caatttgcca aatattcaca atcatgtagt tctagtttac 1850
 atgccaaagt cttccctttt taacattata aaagctaggt tgtctcttga 1900
 attttgaggc cctagagata gtcattttgc aagtaaagag caacgggacc 1950
 ctttctaaaa acgttggttg aaggacctaa atacctggcc ataocataga 2000
 tttgggatga tgtagtctgt gctaaatatt ttgctgaaga agcagtttct 2050

cagacacaac atctcagaat ttttaattttt agaaattcat gggaaattgg 2100
 atttttgtaa taatcttttg atgtttttaa cattgggttcc ctagtcacca 2150
 tagttaccac ttgtatttta agtcatttaa acaagccacg gtggggcctt 2200
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 ttacattttg gagaataaga gggcatttta ttttattagt tactaattca 2300
 agctgtgact attgtatatc tttccaagag ttgaaatgct ggcttcagaa 2350
 tcataccaga ttgtcagtga agctgatgcc taggaacttt taaagggatc 2400
 ctttcaaaag gatcacttag caaacacatg ttgactttta actgatgtat 2450
 gaatattaat actctaaaaa tagaaagacc agtaatatat aagtcacttt 2500
 acagtgtctac ttcacactta aaagtgcacg gtatttttca tgggtattttg 2550
 catgcagcca gttaactctc gtagatagag aagtcaggtg atagatgata 2600
 ttaaaaatta gcaaacaaaa gtgacttgct cagggtcatg cagctgggtg 2650
 atgatagaag agtgggcctt aactggcagg cctgtatgtt tacagactac 2700
 catactgtaa atatgagctt tatgggtgtca ttctcagaaa cttatacatt 2750
 tctgctctcc tttctcctaa gtttcatgca gatgaatata aggtaatata 2800
 ctattatata attcatttgt gatatccaca ataatatgac tggcaagaat 2850
 tgggtggaat ttgtaattaa aataattatt aaacct 2886

<210> 14
 <211> 424
 <212> PRT
 <213> Homo sapiens

<400> 14
 Met Glu Lys Gln Cys Cys Ser His Pro Val Ile Cys Ser Leu Ser
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 Thr Met Tyr Thr Phe Leu Leu Gly Ala Ile Phe Ile Ala Leu Ser
 20 25 30
 Ser Ser Arg Ile Leu Leu Val Lys Tyr Ser Ala Asn Glu Glu Asn
 35 40 45
 Lys Tyr Asp Tyr Leu Pro Thr Thr Val Asn Val Cys Ser Glu Leu
 50 55 60
 Val Lys Leu Val Phe Cys Val Leu Val Ser Phe Cys Val Ile Lys
 65 70 75
 Lys Asp His Gln Ser Arg Asn Leu Lys Tyr Ala Ser Trp Lys Glu
 80 85 90
 Phe Ser Asp Phe Met Lys Trp Ser Ile Pro Ala Phe Leu Tyr Phe
 95 100 105
 Leu Asp Asn Leu Ile Val Phe Tyr Val Leu Ser Tyr Leu Gln Pro
 110 115 120

| | | | |
|-----------------|---------------------|---------------------|-----|
| Ala Met Ala Val | Ile Phe Ser Asn Phe | Ser Ile Ile Thr Thr | Ala |
| | 125 | 130 | 135 |
| Leu Leu Phe Arg | Ile Val Leu Lys Arg | Arg Leu Asn Trp Ile | Gln |
| | 140 | 145 | 150 |
| Trp Ala Ser Leu | Leu Thr Leu Phe Leu | Ser Ile Val Ala Leu | Thr |
| | 155 | 160 | 165 |
| Ala Gly Thr Lys | Thr Leu Gln His Asn | Leu Ala Gly Arg Gly | Phe |
| | 170 | 175 | 180 |
| His His Asp Ala | Phe Phe Ser Pro Ser | Asn Ser Cys Leu Leu | Phe |
| | 185 | 190 | 195 |
| Arg Ser Glu Cys | Pro Arg Lys Asp Asn | Cys Thr Ala Lys Glu | Trp |
| | 200 | 205 | 210 |
| Thr Phe Pro Glu | Ala Lys Trp Asn Thr | Thr Ala Arg Val Phe | Ser |
| | 215 | 220 | 225 |
| His Ile Arg Leu | Gly Met Gly His Val | Leu Ile Ile Val Gln | Cys |
| | 230 | 235 | 240 |
| Phe Ile Ser Ser | Met Ala Asn Ile Tyr | Asn Glu Lys Ile Leu | Lys |
| | 245 | 250 | 255 |
| Glu Gly Asn Gln | Leu Thr Glu Ser Ile | Phe Ile Gln Asn Ser | Lys |
| | 260 | 265 | 270 |
| Leu Tyr Phe Phe | Gly Ile Leu Phe Asn | Gly Leu Thr Leu Gly | Leu |
| | 275 | 280 | 285 |
| Gln Arg Ser Asn | Arg Asp Gln Ile Lys | Asn Cys Gly Phe Phe | Tyr |
| | 290 | 295 | 300 |
| Gly His Ser Ala | Phe Ser Val Ala Leu | Ile Phe Val Thr Ala | Phe |
| | 305 | 310 | 315 |
| Gln Gly Leu Ser | Val Ala Phe Ile Leu | Lys Phe Leu Asp Asn | Met |
| | 320 | 325 | 330 |
| Phe His Val Leu | Met Ala Gln Val Thr | Thr Val Ile Ile Thr | Thr |
| | 335 | 340 | 345 |
| Val Ser Val Leu | Val Phe Asp Phe Arg | Pro Ser Leu Glu Phe | Phe |
| | 350 | 355 | 360 |
| Leu Glu Ala Pro | Ser Val Leu Leu Ser | Ile Phe Ile Tyr Asn | Ala |
| | 365 | 370 | 375 |
| Ser Lys Pro Gln | Val Pro Glu Tyr Ala | Pro Arg Gln Glu Arg | Ile |
| | 380 | 385 | 390 |
| Arg Asp Leu Ser | Gly Asn Leu Trp Glu | Arg Ser Ser Gly Asp | Gly |
| | 395 | 400 | 405 |
| Glu Glu Leu Glu | Arg Leu Thr Lys Pro | Lys Ser Asp Glu Ser | Asp |
| | 410 | 415 | 420 |
| Glu Asp Thr Phe | | | |

<210> 15
<211> 755
<212> DNA
<213> Homo sapiens

<400> 15
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ctatacctac tgtagcttct ccacgtatgg accctaaagg ctactgctgc 150
tactacgggg ctagacagtt actgtctcag ctctaggatg tgcgttcttc 200
cactagaagc tcttctgagg gaggtaatta aaaaacagtg gaatggaaaa 250
acagtgctgt agtcatcctg taatatgctc cttgtcaaca atgtatacat 300
tcctgctagg tgccatattc attgctttta gctcaagtcg catcttacta 350
gtgaagtatt ctgccaatga agaaaacaag tatgattatc ttccaactac 400
tgtgaatgtg tgctcagaac tgggtgaagct agttttctgt gtgcttgtgt 450
cattctgtgt tataaagaaa gatcatcaaa gtagaaattt gaaatatgct 500
tcctggaagg aattctctga tttcatgaag tgggtccattc ctgcctttct 550
ttatttcctg gataacttga ttgtcttcta tgtcctgtcc tatcttcaac 600
cagccatggc tgttatcttc tcaaatttta gcattataac aacagctctt 650
ctattcagga tagtgctgaa gaggcgtcta aactggatcc agtgggcttc 700
cctcctgact ttatttttgt ctattgtggc cttgactgcc gggactaaaa 750
cttta 755

<210> 16
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 16
ctatacctac tgtagcttct 20

<210> 17
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 17
tcagagaatt ccttccagga 20

<210> 18
<211> 40
<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 18

acagtgcctgt agtcatcctg taatatgctc cttgtcaaca 40

<210> 19

<211> 2142

<212> DNA

<213> Homo sapiens

<400> 19

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cgcgcgggcg ccgtggctaa ggctgctacg aagcgagctt gggaggagca 100
gcggcctgcg gggcagagga gcatcccgtc taccaggtcc caagcggcgt 150
ggcccgcggg tcatggccaa aggagaaggc gccgagagcg gctccgcggc 200
ggggctgcta cccaccagca tcctccaaag cactgaacgc ccggcccagg 250
tgaagaaaga accgaaaaag aagaaacaac agttgtctgt ttgcaacaag 300
ctttgctatg cacttggggg agccccctac caggtgacgg gctgtgccct 350
gggtttcttc cttcagatct acctattgga tgtggctcag gtgggccctt 400
tctctgcctc catcatcctg tttgtgggcc gagcctggga tgccatcaca 450
gacccccctg tgggcctctg catcagcaaa tccccctgga cctgcctggg 500
tcgccttatg ccctggatca tcttctccac gccctggcc gtcatcgct 550
acttctcat ctggttcgtg cccgacttcc cacacggcca gacctattgg 600
tacctgcttt tctattgcct ctttgaaaca atggtcacgt gtttccatgt 650
tccctactcg gctctacca tgttcatcag caaccgagca gactgagcgg 700
gattctgcca ccgcctatcg gatgactgtg gaagtgtgg gcacagtgt 750
gggcacggcg atccaggac aaatcgtggg ccaagcagac acgccttggt 800
tocaggactt caatagctct acagtagctt cacaaagtgc caaccataca 850
catggcacca cttcacacag ggaaacgcaa aaggcatacc tgctggcagc 900
gggggtcatt gtctgtatct atataatctg tgctgtcatc ctgatcctgg 950
gcgtgcggga gcagagagaa ccctatgaag ccagcagtc tgagccaatc 1000
gcctacttcc ggggcctacg gctgggtcatg agccacggcc catacatcaa 1050
acttattact ggcttctct tcaacctctt ggctttcatg ctggtggagg 1100
ggaactttgt ottgttttgc acctacacct tgggcttccg caatgaattc 1150
cagaatctac tcctggccat catgctctcg gccactttaa ccattcccat 1200
ctggcagtggt ttcttgacct ggtttggcaa gaagacagct gtatatgttg 1250

ggatctcatc agcagtgcc tttctcatct tgggtggccct catggagagt 1300
aacctcatca ttacatatgc ggtagctgtg gcagctggca tcagtgtggc 1350
agctgccttc ttactaccct ggtccatgct gcctgatgtc attgacgact 1400
tccatctgaa gcagccccac ttccatggaa ccgagcccat cttcttctcc 1450
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taccctcagt ctggactttg cagggtacca gaccctgggc tgctcgcagc 1550
cggaacgtgt caagtttaca ctgaacatgc tcgtgacct ggctccata 1600
gttctcatcc tgctgggcct gctgctcttc aaaatgtacc ccattgatga 1650
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ccagcagctc tggctgtctc gaaacagact ccacagagct ggctagcatc 1750
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gggatcagga cctgtctgcc ggcttgctga gcagctggac tgcaggtgct 1850
aggaaggaa ctgaagactc aaggaggtgg cccaggacac ttgctgtgct 1900
cactgtgggg ccggtctgtc tgtggcctcc tgccctccct ctgctgcct 1950
gtggggccaa gccctggggc tgccactgtg aatatgccaa ggactgatcg 2000
ggcctagccc ggaacactaa tgtagaaacc ttttttttac agagcctaata 2050
taataactta atgactgtgt acatagcaat gtgtgtgtat gtatatgtct 2100
gtgagctatt aatgttatta attttcataa aagctggaaa gc 2142

<210> 20
<211> 458
<212> PRT
<213> Homo sapiens

<400> 20
Met Trp Leu Arg Trp Ala Leu Ser Leu Pro Pro Ser Ser Cys Leu
1 5 10 15
Trp Ala Glu Pro Gly Met Pro Ser Gln Thr Pro Trp Trp Ala Ser
20 25 30
Ala Ser Ala Asn Pro Pro Gly Pro Ala Trp Val Ala Leu Cys Pro
35 40 45
Gly Ser Ser Ser Pro Arg Pro Trp Pro Ser Leu Pro Thr Ser Ser
50 55 60
Ser Gly Ser Cys Pro Thr Ser His Thr Ala Arg Pro Ile Gly Thr
65 70 75
Cys Phe Ser Ile Ala Ser Leu Lys Gln Trp Ser Arg Val Ser Met
80 85 90
Phe Pro Thr Arg Leu Ser Pro Cys Ser Ser Ala Thr Glu Gln Thr
95 100 105

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Arg | Asp | Ser | Ala | Thr | Ala | Tyr | Arg | Met | Thr | Val | Glu | Val | Leu | 110 | 115 | 120 |
| Gly | Thr | Val | Leu | Gly | Thr | Ala | Ile | Gln | Gly | Gln | Ile | Val | Gly | Gln | 125 | 130 | 135 |
| Ala | Asp | Thr | Pro | Cys | Phe | Gln | Asp | Phe | Asn | Ser | Ser | Thr | Val | Ala | 140 | 145 | 150 |
| Ser | Gln | Ser | Ala | Asn | His | Thr | His | Gly | Thr | Thr | Ser | His | Arg | Glu | 155 | 160 | 165 |
| Thr | Gln | Lys | Ala | Tyr | Leu | Leu | Ala | Ala | Gly | Val | Ile | Val | Cys | Ile | 170 | 175 | 180 |
| Tyr | Ile | Ile | Cys | Ala | Val | Ile | Leu | Ile | Leu | Gly | Val | Arg | Glu | Gln | 185 | 190 | 195 |
| Arg | Glu | Pro | Tyr | Glu | Ala | Gln | Gln | Ser | Glu | Pro | Ile | Ala | Tyr | Phe | 200 | 205 | 210 |
| Arg | Gly | Leu | Arg | Leu | Val | Met | Ser | His | Gly | Pro | Tyr | Ile | Lys | Leu | 215 | 220 | 225 |
| Ile | Thr | Gly | Phe | Leu | Phe | Thr | Ser | Leu | Ala | Phe | Met | Leu | Val | Glu | 230 | 235 | 240 |
| Gly | Asn | Phe | Val | Leu | Phe | Cys | Thr | Tyr | Thr | Leu | Gly | Phe | Arg | Asn | 245 | 250 | 255 |
| Glu | Phe | Gln | Asn | Leu | Leu | Leu | Ala | Ile | Met | Leu | Ser | Ala | Thr | Leu | 260 | 265 | 270 |
| Thr | Ile | Pro | Ile | Trp | Gln | Trp | Phe | Leu | Thr | Arg | Phe | Gly | Lys | Lys | 275 | 280 | 285 |
| Thr | Ala | Val | Tyr | Val | Gly | Ile | Ser | Ser | Ala | Val | Pro | Phe | Leu | Ile | 290 | 295 | 300 |
| Leu | Val | Ala | Leu | Met | Glu | Ser | Asn | Leu | Ile | Ile | Thr | Tyr | Ala | Val | 305 | 310 | 315 |
| Ala | Val | Ala | Ala | Gly | Ile | Ser | Val | Ala | Ala | Ala | Phe | Leu | Leu | Pro | 320 | 325 | 330 |
| Trp | Ser | Met | Leu | Pro | Asp | Val | Ile | Asp | Asp | Phe | His | Leu | Lys | Gln | 335 | 340 | 345 |
| Pro | His | Phe | His | Gly | Thr | Glu | Pro | Ile | Phe | Phe | Ser | Phe | Tyr | Val | 350 | 355 | 360 |
| Phe | Phe | Thr | Lys | Phe | Ala | Ser | Gly | Val | Ser | Leu | Gly | Ile | Ser | Thr | 365 | 370 | 375 |
| Leu | Ser | Leu | Asp | Phe | Ala | Gly | Tyr | Gln | Thr | Arg | Gly | Cys | Ser | Gln | 380 | 385 | 390 |
| Pro | Glu | Arg | Val | Lys | Phe | Thr | Leu | Asn | Met | Leu | Val | Thr | Met | Ala | 395 | 400 | 405 |
| Pro | Ile | Val | Leu | Ile | Leu | Leu | Gly | Leu | Leu | Leu | Phe | Lys | Met | Tyr | 410 | 415 | 420 |

Pro Ile Asp Glu Glu Arg Arg Arg Gln Asn Lys Lys Ala Leu Gln
425 430 435

Ala Leu Arg Asp Glu Ala Ser Ser Ser Gly Cys Ser Glu Thr Asp
440 445 450

Ser Thr Glu Leu Ala Ser Ile Leu
455

<210> 21
<211> 571
<212> DNA
<213> Homo sapiens

<400> 21
gggaaacgca aaaggcatac ctgctggcag cgggggtcat tgtctgtatc 50
tatataatct gtgctgtcat cctgatcctg ggcgtgcggg agcagagaga 100
accctatgaa gccagcagt ctgagccaat cgcctaacttc cggggcctac 150
ggctgggtcat gagccacggc ccatacatca aacttattac tggcttcctc 200
ttcacctcct tggctttcat gctgggtggag gggaactttg tcttggtttg 250
cacctacacc ttgggcttcc gcaatgaatt ccagaatcta ctctggcca 300
tcatgctctc ggccacttta accattccca tctggcagtg gttcttgacc 350
cggtttgga agaagacagc tgtatatgtt gggatctcat cagcagtgcc 400
atttctcatc ttggtggccc tcatggagag taacctcatc attacatatg 450
cggtagctgt ggtagctggc atcagtgtgg cagctgcctt cttactacc 500
tggtccatgc tgctgatgt cattgacgac ttccatctga agcagcccca 550
cttccatgga accgagccca t 571

<210> 22
<211> 1173
<212> DNA
<213> Homo sapiens

<400> 22
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aaaggtgcag gtatgagcag gtctgaagac taacattttg tgaagttgta 100
aaacagaaaa cctgttagaa atgtggtggt ttcagcaagg cctcagtttc 150
cttccttcag cccttgtaat ttggacatct gctgctttca tattttcata 200
cattactgca gtaacactcc accatataga cccggcttta cttatatca 250
gtgacactgg tacagtagct ccagaaaaat gcttatttgg ggcaatgcta 300
aatattgagg cagttttatg cattgctacc atttatgttc gttataagca 350
agttcatgct ctgagtcctg aagagaacgt tatcatcaaa ttaaacaagg 400
ctggccttgt acttgaata ctgagttgtt taggaacttc tattgtggca 450

aacttccaga aaacaaccct ttttgctgca catgtaagtg gagctgtgct 500
 taccttttgg atgggctcat tatatatgtt tgttcagacc atcctttcct 550
 accaaatgca gcccaaaatc catggcaaac aagtottctg gatcagactg 600
 ttgtttggta tctgggtgtg agtaagtgca cttagcatgc tgacttgctc 650
 atcagttttg cacagtggca attttgggac tgatttagaa cagaaactcc 700
 attggaaccc cgaggacaaa gggtatgtgc ttcacatgat cactactgca 750
 gcagaatggt ctatgtcatt ttctttcttt gggtttttcc tgacttacat 800
 tcgtgatttt cagaaaattt ctttacgggt ggaagccaat ttacatggat 850
 taaccctcta tgacactgca ctttgcccta ttaacaatga acgaacacgg 900
 ctactttcca gagatatttg atgaaaggat aaaatatttc tgtaatgatt 950
 atgattctca gggattgggg aaagggtcac agaagttgct tattcttctc 1000
 tgaaattttc aaccacttaa tcaaggctga cagtaacact gatgaatgct 1050
 gataatcagg aaacatgaaa gaagccattt gatagattat tctaaaggat 1100
 atcatcaaga agactattaa aaacacctat gcctatactt ttttatctca 1150
 gaaaataaag tcaaaagact atg 1173

<210> 23
 <211> 266
 <212> PRT
 <213> Homo sapiens

<400> 23
 Met Trp Trp Phe Gln Gln Gly Leu Ser Phe Leu Pro Ser Ala Leu
 1 5 10 15
 Val Ile Trp Thr Ser Ala Ala Phe Ile Phe Ser Tyr Ile Thr Ala
 20 25 30
 Val Thr Leu His His Ile Asp Pro Ala Leu Pro Tyr Ile Ser Asp
 35 40 45
 Thr Gly Thr Val Ala Pro Glu Lys Cys Leu Phe Gly Ala Met Leu
 50 55 60
 Asn Ile Ala Ala Val Leu Cys Ile Ala Thr Ile Tyr Val Arg Tyr
 65 70 75
 Lys Gln Val His Ala Leu Ser Pro Glu Glu Asn Val Ile Ile Lys
 80 85 90
 Leu Asn Lys Ala Gly Leu Val Leu Gly Ile Leu Ser Cys Leu Gly
 95 100 105
 Leu Ser Ile Val Ala Asn Phe Gln Lys Thr Thr Leu Phe Ala Ala
 110 115 120
 His Val Ser Gly Ala Val Leu Thr Phe Gly Met Gly Ser Leu Tyr
 125 130 135

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Phe | Val | Gln | Thr | Ile | Leu | Ser | Tyr | Gln | Met | Gln | Pro | Lys | Ile |
| | | | | 140 | | | | | 145 | | | | | 150 |
| His | Gly | Lys | Gln | Val | Phe | Trp | Ile | Arg | Leu | Leu | Leu | Val | Ile | Trp |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Cys | Gly | Val | Ser | Ala | Leu | Ser | Met | Leu | Thr | Cys | Ser | Ser | Val | Leu |
| | | | | 170 | | | | | 175 | | | | | 180 |
| His | Ser | Gly | Asn | Phe | Gly | Thr | Asp | Leu | Glu | Gln | Lys | Leu | His | Trp |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Asn | Pro | Glu | Asp | Lys | Gly | Tyr | Val | Leu | His | Met | Ile | Thr | Thr | Ala |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Ala | Glu | Trp | Ser | Met | Ser | Phe | Ser | Phe | Phe | Gly | Phe | Phe | Leu | Thr |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Tyr | Ile | Arg | Asp | Phe | Gln | Lys | Ile | Ser | Leu | Arg | Val | Glu | Ala | Asn |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Leu | His | Gly | Leu | Thr | Leu | Tyr | Asp | Thr | Ala | Pro | Cys | Pro | Ile | Asn |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Asn | Glu | Arg | Thr | Arg | Leu | Leu | Ser | Arg | Asp | Ile | | | | |
| | | | | 260 | | | | | 265 | | | | | |

<210> 24
 <211> 485
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 14, 484
 <223> unknown base

<400> 24
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 ctgatgccga gttccgtctc tcgggtcttt tcttggtccc aggcaaagcg 100
 gagcggagat cctcaaacgg cctagtgcct cgcgcttccg gagaaaatca 150
 gcgggtctaataattcctct ggtttgttga agcagttacc aagaatcttc 200
 aaccctttcc cacaaaagct aattgagtac acgttcctgt tgagtacacg 250
 ttcctgttga ttacaaaag gtgcaggtat gagcaggtct gaagactaac 300
 attttggtgaa gttgtaaaac agaaaacctg ttagaaatgt ggtgggtttca 350
 gcaaggcctc agtttccttc cttcagccct tgtaatttgg acatctgctg 400
 ctttcatatt ttcatacatt actgcagtaa cactccacca tatagaccg 450
 gctttacctt atatcagtga cactggtaca gtanc 485

<210> 25
 <211> 40
 <212> DNA
 <213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 25
acctgttaga aatgtggtgg tttcagcaag gcctcagttt 40

<210> 26
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 26
ggagatagct gctatgggtt cttcaggcac aacttaacat gggaag 46

<210> 27
<211> 1399
<212> DNA
<213> Homo sapiens

<400> 27
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ctgccccgcg ggccgggggtg cggagccgac atgcgcccgc ttctcggcct 100
ccttctggtc ttcgccgget gcaccttcgc cttgtacttg ctgtcgacgc 150
gactgccccg cgggcgggaga ctgggctcca ccgaggaggc tggaggcagg 200
tcgctgtggt tccccctccga cctggcagag ctgcgggagc tctctgaggt 250
ccttcgagag taccggaagg agcaccaggc ctacgtgttc ctgctcttct 300
gcggcgcccta cctctacaaa cagggttttg ccattccccg ctcagcttc 350
ctgaatgttt tagctggtgc cttgtttggg ccattggctg ggcttctgct 400
gtgctgtgtg ttgacctcg tgggtgccac atgctgctac ctgctctcca 450
gtattttttg caaacagttg gtggtgtcct actttcttga taaagtggcc 500
ctgctgcaga gaaagggtga ggagaacaga aacagcttgt tttttttctt 550
attgtttttg agacttttcc ccattgacacc aaactgggtc ttgaacctct 600
cgcccccaat tctgaacatt cccatcgtgc agttcttctt ctcagttctt 650
atcggtttga tccatataa tttcatctgt gtgcagacag ggtccatcct 700
gtcaacccta acctctctgg atgctctttt ctctgggac actgtcttta 750
agctgttggc cattgccatg gtggcattaa ttcttgaac cctcattaaa 800
aaatttagtc agaaacatct gcaattgaat gaaacaagta ctgctaata 850
tatacacagt agaaaagaca catgatctgg attttctggt tgccacatcc 900
ctggactcag ttgcttattt gtgtaattga tgtggtcttc taaagcccct 950
cattgttttt gattgccttc tataggatgat gtggacactg tgcataatg 1000

tgcagtgtct tttcagaaaag gacactctgc tcttgaaggt gtattacatc 1050
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 agaaaaatgct gtttgtggcc gggcgcggtg gctcacgcct gtaatcccag 1150
 cactttggga ggccgaggcc ggtgattcac aaggtcagga gttcaagacc 1200
 agcctggcca agatggtgaa atcctgtctc taataaaaat acaaaaatta 1250
 gccaggcgtg gtggcaggca cctgtaatcc cagctactcg ggaggctgag 1300
 gcaggagaat tgcttgaacc aagggtggcag aggttgcagt aagccaagat 1350
 cacaccactg cactccagcc tgggtgatag agtgagacac tgtcttgac 1399

<210> 28

<211> 264

<212> PRT

<213> Homo sapiens

<400> 28

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Arg | Pro | Leu | Leu | Gly | Leu | Leu | Leu | Val | Phe | Ala | Gly | Cys | Thr | 1 | 5 | 10 | 15 |
| Phe | Ala | Leu | Tyr | Leu | Leu | Ser | Thr | Arg | Leu | Pro | Arg | Gly | Arg | Arg | 20 | 25 | 30 | |
| Leu | Gly | Ser | Thr | Glu | Glu | Ala | Gly | Gly | Arg | Ser | Leu | Trp | Phe | Pro | 35 | 40 | 45 | |
| Ser | Asp | Leu | Ala | Glu | Leu | Arg | Glu | Leu | Ser | Glu | Val | Leu | Arg | Glu | 50 | 55 | 60 | |
| Tyr | Arg | Lys | Glu | His | Gln | Ala | Tyr | Val | Phe | Leu | Leu | Phe | Cys | Gly | 65 | 70 | 75 | |
| Ala | Tyr | Leu | Tyr | Lys | Gln | Gly | Phe | Ala | Ile | Pro | Gly | Ser | Ser | Phe | 80 | 85 | 90 | |
| Leu | Asn | Val | Leu | Ala | Gly | Ala | Leu | Phe | Gly | Pro | Trp | Leu | Gly | Leu | 95 | 100 | 105 | |
| Leu | Leu | Cys | Cys | Val | Leu | Thr | Ser | Val | Gly | Ala | Thr | Cys | Cys | Tyr | 110 | 115 | 120 | |
| Leu | Leu | Ser | Ser | Ile | Phe | Gly | Lys | Gln | Leu | Val | Val | Ser | Tyr | Phe | 125 | 130 | 135 | |
| Pro | Asp | Lys | Val | Ala | Leu | Leu | Gln | Arg | Lys | Val | Glu | Glu | Asn | Arg | 140 | 145 | 150 | |
| Asn | Ser | Leu | Phe | Phe | Phe | Leu | Leu | Phe | Leu | Arg | Leu | Phe | Pro | Met | 155 | 160 | 165 | |
| Thr | Pro | Asn | Trp | Phe | Leu | Asn | Leu | Ser | Ala | Pro | Ile | Leu | Asn | Ile | 170 | 175 | 180 | |
| Pro | Ile | Val | Gln | Phe | Phe | Phe | Ser | Val | Leu | Ile | Gly | Leu | Ile | Pro | 185 | 190 | 195 | |
| Tyr | Asn | Phe | Ile | Cys | Val | Gln | Thr | Gly | Ser | Ile | Leu | Ser | Thr | Leu | 200 | 205 | 210 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ser | Leu | Asp | Ala | Leu | Phe | Ser | Trp | Asp | Thr | Val | Phe | Lys | Leu |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Leu | Ala | Ile | Ala | Met | Val | Ala | Leu | Ile | Pro | Gly | Thr | Leu | Ile | Lys |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Lys | Phe | Ser | Gln | Lys | His | Leu | Gln | Leu | Asn | Glu | Thr | Ser | Thr | Ala |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Asn | His | Ile | His | Ser | Arg | Lys | Asp | Thr | | | | | | |
| | | | | 260 | | | | | | | | | | |

<210> 29
 <211> 1292
 <212> DNA
 <213> Homo sapiens

<400> 29
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 gtcaatcatt ttccagttct cagccgctca gttgtgatca agggacacgt 100
 ggtttccgaa ctgccagctc agaataggaa aataacttgg gattttatat 150
 tggaagacat ggatcttgct gccaacgaga tcagcattta tgacaaaactt 200
 tcagagactg ttgatttggt gagacagacc ggccatcagt gtggcatgtc 250
 agagaaggca attgaaaaat ttatcagaca gctgctggaa aagaatgaac 300
 ctcagagacc cccccgcag tatcctctcc ttatagttgt gtataagggt 350
 ctcgcaacct tgggattaat cttgctcact gcctactttg tgattcaacc 400
 tttcagccca ttagcacctg agccagtgtt ttctggagct cacacctggc 450
 gctcactcat ccatcacatt aggctgatgt ccttgcccat tgccaagaag 500
 tacatgtcag aaaataaggg agttcctctg catgggggtg atgaagacag 550
 accctttcca gactttgacc cctggtggac aaacgactgt gagcagaatg 600
 agtcagagcc cattcctgcc aactgcactg gctgtgcca gaaacacctg 650
 aaggtgatgc tcctggaaga cggcccaagg aaatttgaga ggctccatcc 700
 actggtgatc aagaacggga agcccctgtt ggaggaagag attcagcatt 750
 ttttgtgcca gtaccctgag gcgacagaag gcttctctga agggtttttc 800
 gccaaagtgt ggcgctgctt tcctgagcgg tggttcccat ttccttatcc 850
 atggaggaga cctctgaaca gatcacaat gttacgtgag ctttttcctg 900
 ttttactca cctgccattt ccaaaagatg cctctttaa caagtgtcc 950
 tttcttcacc cagaacctgt tgtggggagt aagatgcata agatgcctga 1000
 cctattttatc attggcagcg gtgaggccat gttgcagctc atccctccct 1050
 tccagtgccg aagacattgt cagtctgtgg ccatgccaat agagccaggg 1100
 gatatcggt atgtcgacac caccactgg aaggtctacg ttatagccag 1150

aggggtccag ccttttgtca tctgcatgg aaccgctttc tcagaactgt 1200
 aggaaataga actgtgcaca ggaacagctt ccagagccga aaaccaggtt 1250
 gaaaggggaa aaataaaaaac aaaaacgatg aaactgcaaa aa 1292

<210> 30
 <211> 347
 <212> PRT
 <213> Homo sapiens

<400> 30
 Met Asp Leu Ala Ala Asn Glu Ile Ser Ile Tyr Asp Lys Leu Ser
 1 5 10 15
 Glu Thr Val Asp Leu Val Arg Gln Thr Gly His Gln Cys Gly Met
 20 25 30
 Ser Glu Lys Ala Ile Glu Lys Phe Ile Arg Gln Leu Leu Glu Lys
 35 40 45
 Asn Glu Pro Gln Arg Pro Pro Pro Gln Tyr Pro Leu Leu Ile Val
 50 55 60
 Val Tyr Lys Val Leu Ala Thr Leu Gly Leu Ile Leu Leu Thr Ala
 65 70 75
 Tyr Phe Val Ile Gln Pro Phe Ser Pro Leu Ala Pro Glu Pro Val
 80 85 90
 Leu Ser Gly Ala His Thr Trp Arg Ser Leu Ile His His Ile Arg
 95 100 105
 Leu Met Ser Leu Pro Ile Ala Lys Lys Tyr Met Ser Glu Asn Lys
 110 115 120
 Gly Val Pro Leu His Gly Gly Asp Glu Asp Arg Pro Phe Pro Asp
 125 130 135
 Phe Asp Pro Trp Trp Thr Asn Asp Cys Glu Gln Asn Glu Ser Glu
 140 145 150
 Pro Ile Pro Ala Asn Cys Thr Gly Cys Ala Gln Lys His Leu Lys
 155 160 165
 Val Met Leu Leu Glu Asp Ala Pro Arg Lys Phe Glu Arg Leu His
 170 175 180
 Pro Leu Val Ile Lys Thr Gly Lys Pro Leu Leu Glu Glu Glu Ile
 185 190 195
 Gln His Phe Leu Cys Gln Tyr Pro Glu Ala Thr Glu Gly Phe Ser
 200 205 210
 Glu Gly Phe Phe Ala Lys Trp Trp Arg Cys Phe Pro Glu Arg Trp
 215 220 225
 Phe Pro Phe Pro Tyr Pro Trp Arg Arg Pro Leu Asn Arg Ser Gln
 230 235 240
 Met Leu Arg Glu Leu Phe Pro Val Phe Thr His Leu Pro Phe Pro
 245 250 255

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Asp | Ala | Ser | Leu | Asn | Lys | Cys | Ser | Phe | Leu | His | Pro | Glu | Pro |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Val | Val | Gly | Ser | Lys | Met | His | Lys | Met | Pro | Asp | Leu | Phe | Ile | Ile |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Gly | Ser | Gly | Glu | Ala | Met | Leu | Gln | Leu | Ile | Pro | Pro | Phe | Gln | Cys |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Arg | Arg | His | Cys | Gln | Ser | Val | Ala | Met | Pro | Ile | Glu | Pro | Gly | Asp |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Ile | Gly | Tyr | Val | Asp | Thr | Thr | His | Trp | Lys | Val | Tyr | Val | Ile | Ala |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Arg | Gly | Val | Gln | Pro | Leu | Val | Ile | Cys | Asp | Gly | Thr | Ala | Phe | Ser |
| | | | | 335 | | | | | 340 | | | | | 345 |

Glu Leu

<210> 31
 <211> 478
 <212> DNA
 <213> Homo sapiens

<400> 31
 ccacggtgtc cggttcttcgc ccggcggcag ctgtccccga ggcgggagga 50
 gcccgagggg cgcgagcccc gcatgaatca ttgtagtcaa tcattttcca 100
 gttctcagcc gttcagttgt gatcaaggga cacgtggttt ccgaactgcc 150
 agctcagaat aggaaaataa cttgggattt tatattggaa gacatggatc 200
 ttgctgccaa cgagatcagc atttatgaca aactttcaga gactgttgat 250
 ttggtgagac agaccggcca tcagtgtggc atgtcagaga aggcaattga 300
 aaaatttatc agacagctgc tggaaaagaa tgaacctcag agaccccccc 350
 cgcagtatcc tctcettata gttgtgtata aggttctcgc aacottggga 400
 ttaatcttgc tcaactgccta ctttgtgatt caacctttca gccatttagc 450
 acctgagcca gtgctttgtg gagctcac 478

<210> 32
 <211> 3531
 <212> DNA
 <213> Homo sapiens

<400> 32
 cccacgcgtc cgcccacgcg tccggctgaa cacctcttct ttggagtcag 50
 ccactgatga ggcaggggtcc ccacttgtag ctgcagcagc tgcagcagct 100
 gcagagcgct gctcctggct ggtgccactg gtgcgcacgc tgctagaccg 150
 tgcctatgag ccgctggggc tgcagtgggg actgccctcc ctgccaccca 200
 ccaatggcag cccacacctc tttgaagact tccaggcttt ttgtgccaca 250

cccgaatggc gccacttcat cgacaaacag gtacagccaa ccatgtccca 300
 gttcgaaatg gacacgtatg ctaagagcca cgaccttatg tcaggtttct 350
 ggaatgcctg ctatgacatg cttatgagca gtgggcagcg gcgccagtgg 400
 gagcgcgccc agagtcgtcg ggccttccag gagctggtgc tggaacctgc 450
 gcagaggcgg gcgcgcctgg aggggctacg ctacacggca gtgctgaagc 500
 agcaggcaac gcagcactcc atggccctgc tgcactgggg ggcgctgtgg 550
 cgccagctcg ccagcccatg tggggcctgg gcgctgaggg aactcccat 600
 cccccgctgg aaactgtcca gcgccgagac atattcacgc atgcgtctga 650
 agctggtgcc caaccatcac ttcgaccctc acctggaagc cagcgtctc 700
 cgagacaatc tgggtgaggt tcccctgaca cccaccgagg aggcctcact 750
 gcctctggca gtgaccaaag aggccaaagt gagcacccca cccgagttgc 800
 tgcaggagga ccagctcggc gaggacgagc tggctgagct ggagaccccg 850
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 cgagtgccag ctggtgacgg tagtggccgt ggtcccaggg ctgctggagg 950
 tcaccacaca gaatgtatac ttctacgatg gcagcactga gcgcgtggaa 1000
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 totttatoga tcaggccaac tacttctca acttcccatg caaggtgggc 1150
 acgacccag tctcatctcc tagccagact ccgagacccc agcctggccc 1200
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 atgacctgtc tcagtacct gtgttccct gggctcctgca ggactacgtg 1450
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 gcccttcacc tccctgcacg tccagctgca aagtggccgc tttgactgct 1700
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 agccctgccg atgtgaagga gctcatcccg gaattcttct actttcctga 1800
 cttcctggag aaccagaacg gttttgacct gggctgtctc cagctgacca 1850

acgagaaggt aggcgatgtg gtgctacccc cgtgggccag ctctcctgag 1900
gacttcatcc agcagcaccg ccaggctctg gagtcggagt atgtgtctgc 1950
acacctacac gagtggatcg acctcatctt tggctacaag cagcgggggc 2000
cagccgccga ggaggccctc aatgtcttct attactgcac ctatgagggg 2050
gctgtagacc tggaccatgt gacagatgag cgggaacgga aggctctgga 2100
gggcattatc agcaactttg ggcagactcc ctgtcagctg ctgaaggagc 2150
cacatccaac tcggctctca gctgaggaag cagcccatcg ccttgcacgc 2200
ctggacacta actcacctag catcttccag cacctggacg aactcaaggc 2250
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gctggttgcc ctatgaccgc aacataagca actacttcag cttcagcaaa 2350
gacccaccca tgggcagcca caagacgcag cgactgctga gtggcccgtg 2400
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gcactacccc gtggcaagct gttgagccag ctgagctgcc accttgatgt 2550
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cccgggacac cacgtgcatg gtgtggcggc tcctgcatca ggggtggtctg 2650
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gtggccatcc gcagcgtggc cgtgaccaag gagcgcagcc acgtgctggt 3150
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aggtgcgcag cagccagttc gcgcggaagc tgtggcggtc ctgcgcggcg 3250
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cagggggtga gcggggccca ccctgccag ctcagggatt ggcgggcgat 3450

gttaccacct cagggattgg cgggcggaag tcccgccct cgccggctga 3500
 ggggcccgc tggggccag cactggcgtc t 3531

<210> 33
 <211> 1003
 <212> PRT
 <213> Homo sapiens

<400> 33
 Met Ser Gln Phe Glu Met Asp Thr Tyr Ala Lys Ser His Asp Leu
 1 5 10 15
 Met Ser Gly Phe Trp Asn Ala Cys Tyr Asp Met Leu Met Ser Ser
 20 25 30
 Gly Gln Arg Arg Gln Trp Glu Arg Ala Gln Ser Arg Arg Ala Phe
 35 40 45
 Gln Glu Leu Val Leu Glu Pro Ala Gln Arg Arg Ala Arg Leu Glu
 50 55 60
 Gly Leu Arg Tyr Thr Ala Val Leu Lys Gln Gln Ala Thr Gln His
 65 70 75
 Ser Met Ala Leu Leu His Trp Gly Ala Leu Trp Arg Gln Leu Ala
 80 85 90
 Ser Pro Cys Gly Ala Trp Ala Leu Arg Asp Thr Pro Ile Pro Arg
 95 100 105
 Trp Lys Leu Ser Ser Ala Glu Thr Tyr Ser Arg Met Arg Leu Lys
 110 115 120
 Leu Val Pro Asn His His Phe Asp Pro His Leu Glu Ala Ser Ala
 125 130 135
 Leu Arg Asp Asn Leu Gly Glu Val Pro Leu Thr Pro Thr Glu Glu
 140 145 150
 Ala Ser Leu Pro Leu Ala Val Thr Lys Glu Ala Lys Val Ser Thr
 155 160 165
 Pro Pro Glu Leu Leu Gln Glu Asp Gln Leu Gly Glu Asp Glu Leu
 170 175 180
 Ala Glu Leu Glu Thr Pro Met Glu Ala Ala Glu Leu Asp Glu Gln
 185 190 195
 Arg Glu Lys Leu Val Leu Ser Ala Glu Cys Gln Leu Val Thr Val
 200 205 210
 Val Ala Val Val Pro Gly Leu Leu Glu Val Thr Thr Gln Asn Val
 215 220 225
 Tyr Phe Tyr Asp Gly Ser Thr Glu Arg Val Glu Thr Glu Glu Gly
 230 235 240
 Ile Gly Tyr Asp Phe Arg Arg Pro Leu Ala Gln Leu Arg Glu Val
 245 250 255
 His Leu Arg Arg Phe Asn Leu Arg Arg Ser Ala Leu Glu Leu Phe
 260 265 270

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Ile | Asp | Gln | Ala | Asn | Tyr | Phe | Leu | Asn | Phe | Pro | Cys | Lys | Val | 275 | 280 | 285 |
| Gly | Thr | Thr | Pro | Val | Ser | Ser | Pro | Ser | Gln | Thr | Pro | Arg | Pro | Gln | 290 | 295 | 300 |
| Pro | Gly | Pro | Ile | Pro | Pro | His | Thr | Gln | Val | Arg | Asn | Gln | Val | Tyr | 305 | 310 | 315 |
| Ser | Trp | Leu | Leu | Arg | Leu | Arg | Pro | Pro | Ser | Gln | Gly | Tyr | Leu | Ser | 320 | 325 | 330 |
| Ser | Arg | Ser | Pro | Gln | Glu | Met | Leu | Arg | Ala | Ser | Gly | Leu | Thr | Gln | 335 | 340 | 345 |
| Lys | Trp | Val | Gln | Arg | Glu | Ile | Ser | Asn | Phe | Glu | Tyr | Leu | Met | Gln | 350 | 355 | 360 |
| Leu | Asn | Thr | Ile | Ala | Gly | Arg | Thr | Tyr | Asn | Asp | Leu | Ser | Gln | Tyr | 365 | 370 | 375 |
| Pro | Val | Phe | Pro | Trp | Val | Leu | Gln | Asp | Tyr | Val | Ser | Pro | Thr | Leu | 380 | 385 | 390 |
| Asp | Leu | Ser | Asn | Pro | Ala | Val | Phe | Arg | Asp | Leu | Ser | Lys | Pro | Ile | 395 | 400 | 405 |
| Gly | Val | Val | Asn | Pro | Lys | His | Ala | Gln | Leu | Val | Arg | Glu | Lys | Tyr | 410 | 415 | 420 |
| Glu | Ser | Phe | Glu | Asp | Pro | Ala | Gly | Thr | Ile | Asp | Lys | Phe | His | Tyr | 425 | 430 | 435 |
| Gly | Thr | His | Tyr | Ser | Asn | Ala | Ala | Gly | Val | Met | His | Tyr | Leu | Ile | 440 | 445 | 450 |
| Arg | Val | Glu | Pro | Phe | Thr | Ser | Leu | His | Val | Gln | Leu | Gln | Ser | Gly | 455 | 460 | 465 |
| Arg | Phe | Asp | Cys | Ser | Asp | Arg | Gln | Phe | His | Ser | Val | Ala | Ala | Ala | 470 | 475 | 480 |
| Trp | Gln | Ala | Arg | Leu | Glu | Ser | Pro | Ala | Asp | Val | Lys | Glu | Leu | Ile | 485 | 490 | 495 |
| Pro | Glu | Phe | Phe | Tyr | Phe | Pro | Asp | Phe | Leu | Glu | Asn | Gln | Asn | Gly | 500 | 505 | 510 |
| Phe | Asp | Leu | Gly | Cys | Leu | Gln | Leu | Thr | Asn | Glu | Lys | Val | Gly | Asp | 515 | 520 | 525 |
| Val | Val | Leu | Pro | Pro | Trp | Ala | Ser | Ser | Pro | Glu | Asp | Phe | Ile | Gln | 530 | 535 | 540 |
| Gln | His | Arg | Gln | Ala | Leu | Glu | Ser | Glu | Tyr | Val | Ser | Ala | His | Leu | 545 | 550 | 555 |
| His | Glu | Trp | Ile | Asp | Leu | Ile | Phe | Gly | Tyr | Lys | Gln | Arg | Gly | Pro | 560 | 565 | 570 |
| Ala | Ala | Glu | Glu | Ala | Leu | Asn | Val | Phe | Tyr | Tyr | Cys | Thr | Tyr | Glu | 575 | 580 | 585 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ala | Val | Asp | Leu | Asp | His | Val | Thr | Asp | Glu | Arg | Glu | Arg | Lys | 590 | 595 | 600 |
| Ala | Leu | Glu | Gly | Ile | Ile | Ser | Asn | Phe | Gly | Gln | Thr | Pro | Cys | Gln | 605 | 610 | 615 |
| Leu | Leu | Lys | Glu | Pro | His | Pro | Thr | Arg | Leu | Ser | Ala | Glu | Glu | Ala | 620 | 625 | 630 |
| Ala | His | Arg | Leu | Ala | Arg | Leu | Asp | Thr | Asn | Ser | Pro | Ser | Ile | Phe | 635 | 640 | 645 |
| Gln | His | Leu | Asp | Glu | Leu | Lys | Ala | Phe | Phe | Ala | Glu | Val | Thr | Val | 650 | 655 | 660 |
| Ser | Ala | Ser | Gly | Leu | Leu | Gly | Thr | His | Ser | Trp | Leu | Pro | Tyr | Asp | 665 | 670 | 675 |
| Arg | Asn | Ile | Ser | Asn | Tyr | Phe | Ser | Phe | Ser | Lys | Asp | Pro | Thr | Met | 680 | 685 | 690 |
| Gly | Ser | His | Lys | Thr | Gln | Arg | Leu | Leu | Ser | Gly | Pro | Trp | Val | Pro | 695 | 700 | 705 |
| Gly | Ser | Gly | Val | Ser | Gly | Gln | Ala | Leu | Ala | Val | Ala | Pro | Asp | Gly | 710 | 715 | 720 |
| Lys | Leu | Leu | Phe | Ser | Gly | Gly | His | Trp | Asp | Gly | Ser | Leu | Arg | Val | 725 | 730 | 735 |
| Thr | Ala | Leu | Pro | Arg | Gly | Lys | Leu | Leu | Ser | Gln | Leu | Ser | Cys | His | 740 | 745 | 750 |
| Leu | Asp | Val | Val | Thr | Cys | Leu | Ala | Leu | Asp | Thr | Cys | Gly | Ile | Tyr | 755 | 760 | 765 |
| Leu | Ile | Ser | Gly | Ser | Arg | Asp | Thr | Thr | Cys | Met | Val | Trp | Arg | Leu | 770 | 775 | 780 |
| Leu | His | Gln | Gly | Gly | Leu | Ser | Val | Gly | Leu | Ala | Pro | Lys | Pro | Val | 785 | 790 | 795 |
| Gln | Val | Leu | Tyr | Gly | His | Gly | Ala | Ala | Val | Ser | Cys | Val | Ala | Ile | 800 | 805 | 810 |
| Ser | Thr | Glu | Leu | Asp | Met | Ala | Val | Ser | Gly | Ser | Glu | Asp | Gly | Thr | 815 | 820 | 825 |
| Val | Ile | Ile | His | Thr | Val | Arg | Arg | Gly | Gln | Phe | Val | Ala | Ala | Leu | 830 | 835 | 840 |
| Arg | Pro | Leu | Gly | Ala | Thr | Phe | Pro | Gly | Pro | Ile | Phe | His | Leu | Ala | 845 | 850 | 855 |
| Leu | Gly | Ser | Glu | Gly | Gln | Ile | Val | Val | Gln | Ser | Ser | Ala | Trp | Glu | 860 | 865 | 870 |
| Arg | Pro | Gly | Ala | Gln | Val | Thr | Tyr | Ser | Leu | His | Leu | Tyr | Ser | Val | 875 | 880 | 885 |
| Asn | Gly | Lys | Leu | Arg | Ala | Ser | Leu | Pro | Leu | Ala | Glu | Gln | Pro | Thr | 890 | 895 | 900 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|
| Ala | Leu | Thr | Val | Thr | Glu | Asp | Phe | Val | Leu | Leu | Gly | Thr | Ala | Gln |
| | | | | 905 | | | | | 910 | | | | | 915 |
| Cys | Ala | Leu | His | Ile | Leu | Gln | Leu | Asn | Thr | Leu | Leu | Pro | Ala | Ala |
| | | | | 920 | | | | | 925 | | | | | 930 |
| Pro | Pro | Leu | Pro | Met | Lys | Val | Ala | Ile | Arg | Ser | Val | Ala | Val | Thr |
| | | | | 935 | | | | | 940 | | | | | 945 |
| Lys | Glu | Arg | Ser | His | Val | Leu | Val | Gly | Leu | Glu | Asp | Gly | Lys | Leu |
| | | | | 950 | | | | | 955 | | | | | 960 |
| Ile | Val | Val | Val | Ala | Gly | Gln | Pro | Ser | Glu | Val | Arg | Ser | Ser | Gln |
| | | | | 965 | | | | | 970 | | | | | 975 |
| Phe | Ala | Arg | Lys | Leu | Trp | Arg | Ser | Ser | Arg | Arg | Ile | Ser | Gln | Val |
| | | | | 980 | | | | | 985 | | | | | 990 |
| Ser | Ser | Gly | Glu | Thr | Glu | Tyr | Asn | Pro | Thr | Glu | Ala | Arg | | |
| | | | | 995 | | | | | 1000 | | | | | |

<210> 34
 <211> 43
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 34
 tgactgcact acccctgtgc aagctgttga gccagctcag ctg 43

<210> 35
 <211> 1395
 <212> DNA
 <213> Homo sapiens

<400> 35
 cggacgcgtg ggccggacgcg tgggggctgt gagaaagtgc caataaatac 50
 atcatgcaac cccacggccc accttgtgaa ctccctcgtgc ccagggctga 100
 tgtgctgtctt ccagggtctac tcatccaaag gcctaataca acgttctgtc 150
 ttcaatctgc aaatctatgg ggtcctgggg ctcttctgga cccttaactg 200
 ggtactggcc ctgggccaat gcgtcctcgc tggagccttt gcctccttct 250
 actgggcctt ccacaagccc caggacatcc ctaccttccc cttaatctct 300
 gccttcatcc gcacactccg ttaccacact gggtcattgg catttgagc 350
 cctcatcctg acccttgtgc agatagcccg ggtcatcttg gagtatattg 400
 accacaagct cagaggagtg cagaaccctg tagcccgctg catcatgtgc 450
 tgtttcaagt gctgcctctg gtgtctggaa aaatttatca agttcctaaa 500
 ccgcaatgca tacatcatga tcgccatcta cgggaagaat ttctgtgtct 550
 cagccaaaaa tgcgttcctg ctactcatgc gaaacattgt cagggtgggc 600
 gtcttgaca aagtcacaga cctgctgctg ttctttggga agctgctggt 650

ggtcggaggc gtgggggtcc tgtccttott ttttttctcc ggtcgcaccc 700
 cggggctggg taaagacttt aagagccccc acctcaacta ttactggctg 750
 cccatcatga cctccatcct gggggcctat gtcacgcgca gcggcttctt 800
 cagcgttttc ggcatgtgtg tggacacgct cttcctctgc ttcctggaag 850
 acctggagcg gaacaacggc tccctggacc ggccctacta catgtccaag 900
 agccttctaa agattctggg caagaagaac gagggcgcccc cggacaacaa 950
 gaagaggaag aagtgcacgc tccggccctg atccaggact gcaccccacc 1000
 cccaccgtcc agccatccaa cctcacttcg ccttacaggt ctccattttg 1050
 tggtaaaaaa aggttttagg ccaggcgccg tggctcacgc ctgtaatcca 1100
 acacttttag aggctgaggc gggcggatca cctgagtcag gagttcgaga 1150
 ccagcctggc caacatgggt aaacctccgt ctctattaaa aatacaaaaa 1200
 ttagccgaga gtggtggcat gcacctgtca tcccagctac tcgggagggt 1250
 gaggcaggag aatcgcttga acccgggagg cagagggtgc agtgagccga 1300
 gatcgcgcca ctgcactcca acctgggtga cagactctgt ctccaaaaca 1350
 aaacaaacaa acaaaaagat tttattaaag atatatttgtt aactc 1395

<210> 36
 <211> 321
 <212> PRT
 <213> Homo sapiens

<400> 36
 Arg Thr Arg Gly Arg Thr Arg Gly Gly Cys Glu Lys Val Pro Ile
 1 5 10 15
 Asn Thr Ser Cys Asn Pro Thr Ala His Leu Val Asn Ser Ser Cys
 20 25 30
 Pro Gly Leu Met Cys Val Phe Gln Gly Tyr Ser Ser Lys Gly Leu
 35 40 45
 Ile Gln Arg Ser Val Phe Asn Leu Gln Ile Tyr Gly Val Leu Gly
 50 55 60
 Leu Phe Trp Thr Leu Asn Trp Val Leu Ala Leu Gly Gln Cys Val
 65 70 75
 Leu Ala Gly Ala Phe Ala Ser Phe Tyr Trp Ala Phe His Lys Pro
 80 85 90
 Gln Asp Ile Pro Thr Phe Pro Leu Ile Ser Ala Phe Ile Arg Thr
 95 100 105
 Leu Arg Tyr His Thr Gly Ser Leu Ala Phe Gly Ala Leu Ile Leu
 110 115 120
 Thr Leu Val Gln Ile Ala Arg Val Ile Leu Glu Tyr Ile Asp His
 125 130 135

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Lys | Leu | Arg | Gly | Val | Gln | Asn | Pro | Val | Ala | Arg | Cys | Ile | Met | Cys | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Cys | Phe | Lys | Cys | Cys | Leu | Trp | Cys | Leu | Glu | Lys | Phe | Ile | Lys | Phe | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Asn | Arg | Asn | Ala | Tyr | Ile | Met | Ile | Ala | Ile | Tyr | Gly | Lys | Asn | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Phe | Cys | Val | Ser | Ala | Lys | Asn | Ala | Phe | Met | Leu | Leu | Met | Arg | Asn | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ile | Val | Arg | Val | Val | Val | Leu | Asp | Lys | Val | Thr | Asp | Leu | Leu | Leu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Phe | Phe | Gly | Lys | Leu | Leu | Val | Val | Gly | Gly | Val | Gly | Val | Leu | Ser | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Phe | Phe | Phe | Phe | Ser | Gly | Arg | Ile | Pro | Gly | Leu | Gly | Lys | Asp | Phe | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Lys | Ser | Pro | His | Leu | Asn | Tyr | Tyr | Trp | Leu | Pro | Ile | Met | Thr | Ser | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Ile | Leu | Gly | Ala | Tyr | Val | Ile | Ala | Ser | Gly | Phe | Phe | Ser | Val | Phe | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Gly | Met | Cys | Val | Asp | Thr | Leu | Phe | Leu | Cys | Phe | Leu | Glu | Asp | Leu | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Glu | Arg | Asn | Asn | Gly | Ser | Leu | Asp | Arg | Pro | Tyr | Tyr | Met | Ser | Lys | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ser | Leu | Leu | Lys | Ile | Leu | Gly | Lys | Lys | Asn | Glu | Ala | Pro | Pro | Asp | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Asn | Lys | Lys | Arg | Lys | Lys | | | | | | | | | | |
| | | | | 320 | | | | | | | | | | | |

<210> 37
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 37
 tcgtgcccag gggctgatgt gc 22

<210> 38
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 38
 gtctttaccc agccccggga tgcg 24

<210> 39
 <211> 50

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 39
ggcctaatacc aacgttctgt cttcaatctg caaatctatg gggtcctggg 50

<210> 40
<211> 1365
<212> DNA
<213> Homo sapiens

<400> 40
gagtccttgac cgccgccggg ctcttggtac ctcagcgcga gcgccaggcg 50
tccggccgcc gtggtatgt tcgtgtccga tttccgcaa gagttctacg 100
aggtggtcca gagccagagg gtcccttctct tcgtggcctc ggacgtggat 150
gctctgtgtg cgtgcaagat ccttcaggcc ttgttccagt gtgaccacgt 200
gcaatatacg ctggttccag tttctgggtg gcaagaactt gaaactgcat 250
ttcttgagca taaagaacag tttoattatt ttattctcat aaactgtgga 300
gctaatttag acctattgga tattcttcaa cctgatgaag aactatatt 350
ctttgtgtgt gactcccata ggccagtcaa tgtcgtcaat gtatacaacg 400
ataccagat caaattactc attaaacaag atgatgacct tgaagttccc 450
gcctatgaag acatcttcag ggatgaagag gaggatgaag agcattcagg 500
aatgacagt gatgggtcag agccttctga gaagcgcaca cggttagaag 550
aggagatagt ggagcaaacc atgcggagga ggcagcggcg agagtgggag 600
gcccgagaa gagacatcct ctttgactac gagcagtatg aatatcatgg 650
gacatcgtca gccatggtga tgtttgagct ggcttggatg ctgtccaagg 700
acctgaatga catgctgtgg tgggccatcg ttggactaac agaccagtgg 750
gtgcaagaca agatcactca aatgaaatac gtgactgatg ttggtgtcct 800
gcagcgccac gtttcccgcc acaaccaccg gaacgaggat gaggagaaca 850
cactctccgt ggactgcaca cggatctcct ttgagtatga cctccgcctg 900
gtgctctacc agcactggtc cctccatgac agcctgtgca acaccagcta 950
taccgcagcc aggttcaagc tgtggtctgt gcatggacag aagcggctcc 1000
aggagtccct tgcagacatg ggtcttcccc tgaagcaggt gaagcagaag 1050
ttccaggcca tggacatctc cttgaaggag aatttgcggg aatgattga 1100
agagtctgca aataaatttg ggatgaagga catgcgcgtg cagactttca 1150
gcattcattt tgggttcaag cacaagtttc tggccagcga cgtggtcttt 1200

gccaccatgt ctttgatgga gagccccgag aaggatggct cagggacaga 1250
 tcacttcatc caggtcttgg acagcctctc caggagtaac ctggacaagc 1300
 tgtaccatgg cctggaactc gccaaagaagc agctgcgagc caccagcag 1350
 accattgcca gctgc 1365

<210> 41
 <211> 566
 <212> PRT
 <213> Homo sapiens

<400> 41
 Met Phe Val Ser Asp Phe Arg Lys Glu Phe Tyr Glu Val Val Gln
 1 5 10 15
 Ser Gln Arg Val Leu Leu Phe Val Ala Ser Asp Val Asp Ala Leu
 20 25 30
 Cys Ala Cys Lys Ile Leu Gln Ala Leu Phe Gln Cys Asp His Val
 35 40 45
 Gln Tyr Thr Leu Val Pro Val Ser Gly Trp Gln Glu Leu Glu Thr
 50 55 60
 Ala Phe Leu Glu His Lys Glu Gln Phe His Tyr Phe Ile Leu Ile
 65 70 75
 Asn Cys Gly Ala Asn Val Asp Leu Leu Asp Ile Leu Gln Pro Asp
 80 85 90
 Glu Asp Thr Ile Phe Phe Val Cys Asp Ser His Arg Pro Val Asn
 95 100 105
 Val Val Asn Val Tyr Asn Asp Thr Gln Ile Lys Leu Leu Ile Lys
 110 115 120
 Gln Asp Asp Asp Leu Glu Val Pro Ala Tyr Glu Asp Ile Phe Arg
 125 130 135
 Asp Glu Glu Glu Asp Glu Glu His Ser Gly Asn Asp Ser Asp Gly
 140 145 150
 Ser Glu Pro Ser Glu Lys Arg Thr Arg Leu Glu Glu Glu Ile Val
 155 160 165
 Glu Gln Thr Met Arg Arg Arg Gln Arg Arg Glu Trp Glu Ala Arg
 170 175 180
 Arg Arg Asp Ile Leu Phe Asp Tyr Glu Gln Tyr Glu Tyr His Gly
 185 190 195
 Thr Ser Ser Ala Met Val Met Phe Glu Leu Ala Trp Met Leu Ser
 200 205 210
 Lys Asp Leu Asn Asp Met Leu Trp Trp Ala Ile Val Gly Leu Thr
 215 220 225
 Asp Gln Trp Val Gln Asp Lys Ile Thr Gln Met Lys Tyr Val Thr
 230 235 240
 Asp Val Gly Val Leu Gln Arg His Val Ser Arg His Asn His Arg

<210> 42
 <211> 380
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 44, 118, 172, 183
 <223> unknown base

<400> 42
 gtacctcagc gcgagcgcca ggcgtccggc cgcggtggct atgntcgtgt 50
 ccgatttccg caaagagttc tacgaggtgg tccagagcca gagggtcctt 100
 ctcttcgtgg cctcggangt ggatgctctg tgtgcgtgca agatccttca 150
 ggccttgttc cagtgtgacc angtgcaata tangctgggt ccagtttctg 200
 ggtggcaaga acttgaaact gcatttcttg agcataaaga acagtttcat 250
 tattttattc tcataaactg tggagctaata gtagacctat tggatattct 300
 tcaacctgat gaagacacta tattctttgt gtgtgacacc cataggccag 350
 tcaatgttgt caatgtatac aacgataccc 380

<210> 43
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 43
 ttccgcaaag agttctacga ggtgg 25

<210> 44
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 44
 attgacaaca ttgactggcc tatggg 26

<210> 45
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 45
 gtggatgctc tgtgtgcgtg caagatcctt caggccttgt tccagtgtga 50

<210> 46

<211> 3089
<212> DNA
<213> Homo sapiens

<400> 46
caggaaccct ctctttgggt ctggattggg acccctttcc agtaccattt 50
tttctagtga accacgaagg gacgatacca gaaaacaccc tcaacccaaa 100
ggaaatagac tacagcccca attggctgac tttggctata gaaaaaagaa 150
aggaacgaaa agagacagtt ttttttgaa agctaagtct tccctttatc 200
gagtcaagaa accccccctt cttgagctat ttacagcttt taacaattga 250
gtaaagtacg ctccggtcac catggtgaca gcgcgcctgg gtcccgtctg 300
ggcagcgctc ctgctctttc tcctgatgtg tgagatccgt atggtggagc 350
tcacctttga cagagctgtg gccagcggct gccaacgggt ctgtgactct 400
gaggaccccc tggatcctgc ccatgtatcc tcagcctctt cctccggccg 450
ccccacgcc ctgcctgaga tcagacccta cattaatat accatcctga 500
agggtgacaa aggggaccca ggccaatgg gcctgccagg gtacatgggc 550
agggagggtc cccaagggga gcctggccct cagggcagca agggtgacaa 600
gggggagatg ggcagccccg gcgccccgtg ccagaagcgc ttcttcgcct 650
tctcagtggg ccgcaagacg gccctgcaca gcggcgagga cttccagacg 700
ctgctcttcg aaagggtctt tgtgaacctt gatgggtgct ttgacatggc 750
gaccggccag tttgctgctc ccctgcgtgg catctacttc ttcagcctca 800
atgtgcacag ctggaattac aaggagacgt acgtgcacat tatgcataac 850
cagaaagagg ctgtcatcct gtacgcgcag ccagcgcagc gcagcatcat 900
gcagagccag agtgtgatgc tggacctggc ctacggggac cgcgtctggg 950
tgcggtctct caagcgccag cgcgagaacg ccatctacag caacgacttc 1000
gacacctaca tcaccttcag cggccacctc atcaaggccg aggacgactg 1050
agggcctctg ggccaccctc ccggctggag agctcaggtg ctggtcccgt 1100
cccctgcagg gctcagtttg cactgctgtg aagcaggaag gccagggagg 1150
tccccgggga cctggcattc tggggagacc ctgcttctat cttggctgcc 1200
atcatccctc ccagcctatt tctgtcctc tcttctctct tggacctatt 1250
ttaagaagct tgctaacct aatattctag aactttccca gcctcgtagc 1300
ccagcacttc tcaaacttgg aaatgcatgc gaatcaccgc gggttcgtgt 1350
taaatgcaga ttctgactca gcaggtctga gtgggtccag gattctgtgt 1400
ttctcatatg ttctgggtg atgctgatgg ggtcagtcta tgaaccacac 1450

tggagcaacc aggttctagg actttctcaa tattctagta ctttctgaac 1500
 attctggaat cctccccaca ttctagaatt ctccaacat ttttttttct 1550
 tgagacagag tcttgctctg ttgcccaggc tagagtgcag tggtgcaatc 1600
 tcagttcact gcaacctctg cctcccggt tcaagcgatt cttctgcctc 1650
 agcctcccta gtggctggga ttacaggcgc ctgctaccat gcctggctaa 1700
 tttttgtatt tttagtagag atggggtttc accatattgg ccaggctggt 1750
 cttgaactcc tgacttcagg tgaccacccc gcctcggcct ctcaaatgc 1800
 tgggattaca ggtgtgagcc accgtgcctg gccaatcca acattcttaa 1850
 attctctcat cctccagggt cctcccgctg tatgttctct ttacccttc 1900
 cccctcttct cttgctcagg cctgcaccac tgcagccacc gttcatttat 1950
 tcattcatta aacaactgagc actcactctg tgctgggtcc cggaagggt 2000
 gaggggtca gacacaggcc ctgcccctgc cctcagtgac tggccagtcc 2050
 agcccaggcg gggagagatg tgtacatagg ttttaaagca gaccagagc 2100
 tcatgggggc ctgtgtctg ggtgttcagg tgctgctggt cctccattac 2150
 cactgctcc ccaaggctgg tgggacgggg tcccggtggc aggggcagggt 2200
 atctccttcc cgttcctcat ccacctgcc agtgctcatc gttacagcaa 2250
 accccagggg gccttgcca ggtcaagggt tctgtgagga gaggaccag 2300
 gagtggtggg gcatttgggg ggtgaagtgg ccccggaaga atggaacca 2350
 caccatagc tctccccaca gctgatacgg catcctgoga gaagacctgc 2400
 cctcctcact gggatcccct tcctgcctcc tcccagggt ctgccagggc 2450
 cttgctcagt ccttccacc aaagtcatct gaacttcgt tccccaggg 2500
 cctccagctg ccctcagaca ctgatgtctg tcccagggtg ctctctgccc 2550
 ctcatgcccc tctcaccggc ccagtcccc gactctccag gctttatcaa 2600
 ggtgctaagg cccgggtggg cagctcctcg tctcagagcc ctccctccggc 2650
 ctggtgctgc ctttaciaaac acctgcagga gaagggccac ggaagcccca 2700
 ggcttttagag ccctcagcag gtctggggag ctagagcaaa ggagggacct 2750
 caggccttcc gtttcttctt ccagggtggg gtggcctggt gttcccctag 2800
 ccttccaaac ccagggtggc tgcccttctc cccagaggga ggcggcctcc 2850
 gccattggt gctcatgcag actctggggc tgagggtgcc cgggggggtga 2900
 tctctggtgc tcacagccga gggagccgtg gctccatggc cagatgacgg 2950
 aaacagggtc tgaccaagtg ccaggaagac ctgtgctata aaccacctg 3000
 cctgatcctg cccctgcctg accccgccac gccctgcctg ccagcatgat 3050

taaagaatgc tgtctcctct tggaaaaaaa aaaaaaaaaa 3089

<210> 47
<211> 259
<212> PRT
<213> Homo sapiens

<220>
<221> Signal Peptide
<222> 1-20
<223> Signal Peptide

<220>
<221> N-glycosylation Site
<222> 72-75
<223> N-glycosylation Site

<220>
<221> Clq Domain Proteins
<222> 144-178, 78-111, 84-117
<223> Clq Domain Proteins

<400> 47
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Phe Leu Leu Met Cys Glu Ile Arg Met Val Glu Leu Thr Phe Asp
20 25 30
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35 40 45
Pro Leu Asp Pro Ala His Val Ser Ser Ala Ser Ser Ser Gly Arg
50 55 60
Pro His Ala Leu Pro Glu Ile Arg Pro Tyr Ile Asn Ile Thr Ile
65 70 75
Leu Lys Gly Asp Lys Gly Asp Pro Gly Pro Met Gly Leu Pro Gly
80 85 90
Tyr Met Gly Arg Glu Gly Pro Gln Gly Glu Pro Gly Pro Gln Gly
95 100 105
Ser Lys Gly Asp Lys Gly Glu Met Gly Ser Pro Gly Ala Pro Cys
110 115 120
Gln Lys Arg Phe Phe Ala Phe Ser Val Gly Arg Lys Thr Ala Leu
125 130 135
His Ser Gly Glu Asp Phe Gln Thr Leu Leu Phe Glu Arg Val Phe
140 145 150
Val Asn Leu Asp Gly Cys Phe Asp Met Ala Thr Gly Gln Phe Ala
155 160 165
Ala Pro Leu Arg Gly Ile Tyr Phe Phe Ser Leu Asn Val His Ser
170 175 180
Trp Asn Tyr Lys Glu Thr Tyr Val His Ile Met His Asn Gln Lys
185 190 195
Glu Ala Val Ile Leu Tyr Ala Gln Pro Ser Glu Arg Ser Ile Met

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 200 | | 205 | | 210 |
| Gln Ser Gln Ser | Val Met Leu Asp Leu | Ala Tyr Gly Asp Arg | Val | | |
| | 215 | 220 | 225 | | |
| Trp Val Arg Leu | Phe Lys Arg Gln Arg | Glu Asn Ala Ile Tyr | Ser | | |
| | 230 | 235 | 240 | | |
| Asn Asp Phe Asp | Thr Tyr Ile Thr Phe | Ser Gly His Leu Ile | Lys | | |
| | 245 | 250 | 255 | | |
| Ala Glu Asp Asp | | | | | |

<210> 48
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 48
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<210> 49
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 49
 ggtccccgta ggccaggtcc agc 23

<210> 50
 <211> 50
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 50
 ctacttcttc agcctcaatg tgcacagctg gaattacaag gagacgtacg 50

<210> 51
 <211> 2768
 <212> DNA
 <213> Homo sapiens

<400> 51
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 ccgcctcccg ggacagaaga tgtgctccag ggtccctctg ctgctgcgcg 150
 tgctcctgct actggccctg gggcctgggg tgcagggctg cccatccggc 200
 tgccagtgcg gccagccaca gacagtcttc tgcaactgcc gccaggggac 250

| | 95 | 100 | 105 |
|-----------------|---------------------|---------------------|-----|
| Asp Leu Thr Ala | Asn Arg Leu His Glu | Ile Thr Asn Glu Thr | Phe |
| | 110 | 115 | 120 |
| Arg Gly Leu Arg | Arg Leu Glu Arg Leu | Tyr Leu Gly Lys Asn | Arg |
| | 125 | 130 | 135 |
| Ile Arg His Ile | Gln Pro Gly Ala Phe | Asp Thr Leu Asp Arg | Leu |
| | 140 | 145 | 150 |
| Leu Glu Leu Lys | Leu Gln Asp Asn Glu | Leu Arg Ala Leu Pro | Pro |
| | 155 | 160 | 165 |
| Leu Arg Leu Pro | Arg Leu Leu Leu Leu | Asp Leu Ser His Asn | Ser |
| | 170 | 175 | 180 |
| Leu Leu Ala Leu | Glu Pro Gly Ile Leu | Asp Thr Ala Asn Val | Glu |
| | 185 | 190 | 195 |
| Ala Leu Arg Leu | Ala Gly Leu Gly Leu | Gln Gln Leu Asp Glu | Gly |
| | 200 | 205 | 210 |
| Leu Phe Ser Arg | Leu Arg Asn Leu His | Asp Leu Asp Val Ser | Asp |
| | 215 | 220 | 225 |
| Asn Gln Leu Glu | Arg Val Pro Pro Val | Ile Arg Gly Leu Arg | Gly |
| | 230 | 235 | 240 |
| Leu Thr Arg Leu | Arg Leu Ala Gly Asn | Thr Arg Ile Ala Gln | Leu |
| | 245 | 250 | 255 |
| Arg Pro Glu Asp | Leu Ala Gly Leu Ala | Ala Leu Gln Glu Leu | Asp |
| | 260 | 265 | 270 |
| Val Ser Asn Leu | Ser Leu Gln Ala Leu | Pro Gly Asp Leu Ser | Gly |
| | 275 | 280 | 285 |
| Leu Phe Pro Arg | Leu Arg Leu Leu Ala | Ala Ala Arg Asn Pro | Phe |
| | 290 | 295 | 300 |
| Asn Cys Val Cys | Pro Leu Ser Trp Phe | Gly Pro Trp Val Arg | Glu |
| | 305 | 310 | 315 |
| Ser His Val Thr | Leu Ala Ser Pro Glu | Glu Thr Arg Cys His | Phe |
| | 320 | 325 | 330 |
| Pro Pro Lys Asn | Ala Gly Arg Leu Leu | Leu Glu Leu Asp Tyr | Ala |
| | 335 | 340 | 345 |
| Asp Phe Gly Cys | Pro Ala Thr Thr Thr | Thr Ala Thr Val Pro | Thr |
| | 350 | 355 | 360 |
| Thr Arg Pro Val | Val Arg Glu Pro Thr | Ala Leu Ser Ser Ser | Leu |
| | 365 | 370 | 375 |
| Ala Pro Thr Trp | Leu Ser Pro Thr Ala | Pro Ala Thr Glu Ala | Pro |
| | 380 | 385 | 390 |
| Ser Pro Pro Ser | Thr Ala Pro Pro Thr | Val Gly Pro Val Pro | Gln |
| | 395 | 400 | 405 |
| Pro Gln Asp Cys | Pro Pro Ser Thr Cys | Leu Asn Gly Gly Thr | Cys |

| 410 | 415 | 420 |
|----------------------------|----------------------------|----------------------------|
| His Leu Gly Thr Arg 425 | His His Leu Ala Cys 430 | Leu Cys Pro Glu Gly 435 |
| Phe Thr Gly Leu Tyr 440 | Cys Glu Ser Gln Met 445 | Gly Gln Gly Thr Arg 450 |
| Pro Ser Pro Thr Pro 455 | Val Thr Pro Arg Pro 460 | Pro Arg Ser Leu Thr 465 |
| Leu Gly Ile Glu Pro 470 | Val Ser Pro Thr Ser 475 | Leu Arg Val Gly Leu 480 |
| Gln Arg Tyr Leu Gln 485 | Gly Ser Ser Val Gln 490 | Leu Arg Ser Leu Arg 495 |
| Leu Thr Tyr Arg Asn 500 | Leu Ser Gly Pro Asp 505 | Lys Arg Leu Val Thr 510 |
| Leu Arg Leu Pro Ala 515 | Ser Leu Ala Glu Tyr 520 | Thr Val Thr Gln Leu 525 |
| Arg Pro Asn Ala Thr 530 | Tyr Ser Val Cys Val 535 | Met Pro Leu Gly Pro 540 |
| Gly Arg Val Pro Glu 545 | Gly Glu Glu Ala Cys 550 | Gly Glu Ala His Thr 555 |
| Pro Pro Ala Val His 560 | Ser Asn His Ala Pro 565 | Val Thr Gln Ala Arg 570 |
| Glu Gly Asn Leu Pro 575 | Leu Leu Ile Ala Pro 580 | Ala Leu Ala Ala Val 585 |
| Leu Leu Ala Ala Leu 590 | Ala Ala Val Gly Ala 595 | Ala Tyr Cys Val Arg 600 |
| Arg Gly Arg Ala Met 605 | Ala Ala Ala Ala Gln 610 | Asp Lys Gly Gln Val 615 |
| Gly Pro Gly Ala Gly 620 | Pro Leu Glu Leu Glu 625 | Gly Val Lys Val Pro 630 |
| Leu Glu Pro Gly Pro 635 | Lys Ala Thr Glu Gly 640 | Gly Gly Glu Ala Leu 645 |
| Pro Ser Gly Ser Glu 650 | Cys Glu Val Pro Leu 655 | Met Gly Phe Pro Gly 660 |
| Pro Gly Leu Gln Ser 665 | Pro Leu His Ala Lys 670 | Pro Tyr Ile |

<210> 53

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 53

tcttcagccg cttgcgcaac ctc 23

<210> 54
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 54
ttgctcacat ccagctcctg cagg 24

<210> 55
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 55
tggatgttgt ccagacaacc agctggagct gtatccgagg c 41

<210> 56
<211> 3462
<212> DNA
<213> Homo sapiens

<400> 56
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ttttgagctc atcttcatca ttcataatgag gaaataagtg gtaaaatcct 100
tggaaatata atgagactca tcagaaacat ttacatatatt ttagtagtattg 150
ttatgacagc agaggggtgat gctccagagc tgccagaaga aagggaactg 200
atgaccaact gctccaacat gtctctaaga aagggtcccg cagacttgac 250
cccagccaca acgacactgg atttatccta taacctcctt tttcaactcc 300
agagttcaga ttttcattct gtctccaaac tgagagtgtt gattctatgc 350
cataacagaa ttcaacagct ggatctcaaa acctttgaat tcaacaagga 400
gttaagatat ttagatttgt ctaataacag actgaagagt gtaacttggt 450
atttactggc aggtctcagg tatttagatc tttcttttaa tgactttgac 500
accatgccta tctgtgagga agctggcaac atgtcacacc tggaaatcct 550
aggtttgagt ggggcaaaaa tacaaaaatc agatttccag aaaattgctc 600
atctgcatct aaatactgtc ttcttaggat tcagaactct tcctcattat 650
gaagaaggta gcctgcccac cttaaacaca acaaaactgc acattgtttt 700
accaatggac acaaatttct gggttctttt gcgtgatgga atcaagactt 750
caaaaatatt agaaatgaca aatatagatg gcaaaagcca atttgtaagt 800
tatgaaatgc aacgaaatct tagtttagaa aatgctaaga catcggttct 850
attgcttaat aaagttgatt tactctggga cgaccttttc cttatcttac 900

gtctcgaggt tctacaatct ctctgatgag aacagattgt ctataaaatc 2550
ccacagtcct tgggaagttg gggaccacat acactgttgg gatgtacatt 2600
gatacaacct ttatgatggc aatttgacaa tatttattaa aataaaaaat 2650
ggttattccc ttcatatcag tttctagaag gatttctaag aatgtatcct 2700
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cccaggattg tttataatca tgaaaaatgt ggccaggtgc agtgggtcac 2800
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cagtgaagctg agatcgagcc actgcactcc agcctggtga cagagcgaga 3050
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tcatggccac aaaataaggt ctaattcaat aaattatagt acattaatgt 3150
aatataatat tacatgccac taaaaagaat aaggtagctg tatatttcct 3200
ggtatggaaa aaacatatta atatgttata aactattagg ttggtgcaaa 3250
actaattgtg gtttttgcca ttgaaatggc attgaaataa aagtgtaaaag 3300
aaatctatac cagatgtagt aacagtgggtg tgggtctggg aggttggatt 3350
acaggggagca tttgatttct atgttgtgta tttctataat gtttgaattg 3400
tttagaatga atctgtatct cttttataag tagaaaaaaa ataaagatag 3450
tttttacagc ct 3462

<210> 57
<211> 811
<212> PRT
<213> Homo sapiens

<400> 57
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Thr Ala Glu Gly Asp Ala Pro Glu Leu Pro Glu Glu Arg Glu Leu 30
20 25 30
Met Thr Asn Cys Ser Asn Met Ser Leu Arg Lys Val Pro Ala Asp 45
35 40 45
Leu Thr Pro Ala Thr Thr Thr Leu Asp Leu Ser Tyr Asn Leu Leu 60
50 55 60
Phe Gln Leu Gln Ser Ser Asp Phe His Ser Val Ser Lys Leu Arg 75
65 70 75
Val Leu Ile Leu Cys His Asn Arg Ile Gln Gln Leu Asp Leu Lys 90
80 85 90

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| Thr | Phe | Glu | Phe | Asn 95 | Lys | Glu | Leu | Arg | Tyr 100 | Leu | Asp | Leu | Ser | Asn 105 |
| Asn | Arg | Leu | Lys | Ser 110 | Val | Thr | Trp | Tyr | Leu 115 | Leu | Ala | Gly | Leu | Arg 120 |
| Tyr | Leu | Asp | Leu | Ser 125 | Phe | Asn | Asp | Phe | Asp 130 | Thr | Met | Pro | Ile | Cys 135 |
| Glu | Glu | Ala | Gly | Asn 140 | Met | Ser | His | Leu | Glu 145 | Ile | Leu | Gly | Leu | Ser 150 |
| Gly | Ala | Lys | Ile | Gln 155 | Lys | Ser | Asp | Phe | Gln 160 | Lys | Ile | Ala | His | Leu 165 |
| His | Leu | Asn | Thr | Val 170 | Phe | Leu | Gly | Phe | Arg 175 | Thr | Leu | Pro | His | Tyr 180 |
| Glu | Glu | Gly | Ser | Leu 185 | Pro | Ile | Leu | Asn | Thr 190 | Thr | Lys | Leu | His | Ile 195 |
| Val | Leu | Pro | Met | Asp 200 | Thr | Asn | Phe | Trp | Val 205 | Leu | Leu | Arg | Asp | Gly 210 |
| Ile | Lys | Thr | Ser | Lys 215 | Ile | Leu | Glu | Met | Thr 220 | Asn | Ile | Asp | Gly | Lys 225 |
| Ser | Gln | Phe | Val | Ser 230 | Tyr | Glu | Met | Gln | Arg 235 | Asn | Leu | Ser | Leu | Glu 240 |
| Asn | Ala | Lys | Thr | Ser 245 | Val | Leu | Leu | Leu | Asn 250 | Lys | Val | Asp | Leu | Leu 255 |
| Trp | Asp | Asp | Leu | Phe 260 | Leu | Ile | Leu | Gln | Phe 265 | Val | Trp | His | Thr | Ser 270 |
| Val | Glu | His | Phe | Gln 275 | Ile | Arg | Asn | Val | Thr 280 | Phe | Gly | Gly | Lys | Ala 285 |
| Tyr | Leu | Asp | His | Asn 290 | Ser | Phe | Asp | Tyr | Ser 295 | Asn | Thr | Val | Met | Arg 300 |
| Thr | Ile | Lys | Leu | Glu 305 | His | Val | His | Phe | Arg 310 | Val | Phe | Tyr | Ile | Gln 315 |
| Gln | Asp | Lys | Ile | Tyr 320 | Leu | Leu | Leu | Thr | Lys 325 | Met | Asp | Ile | Glu | Asn 330 |
| Leu | Thr | Ile | Ser | Asn 335 | Ala | Gln | Met | Pro | His 340 | Met | Leu | Phe | Pro | Asn 345 |
| Tyr | Pro | Thr | Lys | Phe 350 | Gln | Tyr | Leu | Asn | Phe 355 | Ala | Asn | Asn | Ile | Leu 360 |
| Thr | Asp | Glu | Leu | Phe 365 | Lys | Arg | Thr | Ile | Gln 370 | Leu | Pro | His | Leu | Lys 375 |
| Thr | Leu | Ile | Leu | Asn 380 | Gly | Asn | Lys | Leu | Glu 385 | Thr | Leu | Ser | Leu | Val 390 |
| Ser | Cys | Phe | Ala | Asn 395 | Asn | Thr | Pro | Leu | Glu 400 | His | Leu | Asp | Leu | Ser 405 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ser | Asp | His | Ile | Ile | Leu | Ile | Leu | Leu | Glu | Pro | Ile | Pro | Phe |
| | | | | 725 | | | | | 730 | | | | | 735 |
| Tyr | Cys | Ile | Pro | Thr | Arg | Tyr | His | Lys | Leu | Lys | Ala | Leu | Leu | Glu |
| | | | | 740 | | | | | 745 | | | | | 750 |
| Lys | Lys | Ala | Tyr | Leu | Glu | Trp | Pro | Lys | Asp | Arg | Arg | Lys | Cys | Gly |
| | | | | 755 | | | | | 760 | | | | | 765 |
| Leu | Phe | Trp | Ala | Asn | Leu | Arg | Ala | Ala | Ile | Asn | Val | Asn | Val | Leu |
| | | | | 770 | | | | | 775 | | | | | 780 |
| Ala | Thr | Arg | Glu | Met | Tyr | Glu | Leu | Gln | Thr | Phe | Thr | Glu | Leu | Asn |
| | | | | 785 | | | | | 790 | | | | | 795 |
| Glu | Glu | Ser | Arg | Gly | Ser | Thr | Ile | Ser | Leu | Met | Arg | Thr | Asp | Cys |
| | | | | 800 | | | | | 805 | | | | | 810 |

Leu

<210> 58
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 58
 tcccaccagg tatcataaac tgaa 24

<210> 59
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 59
 ttatagacaa tctgttctca tcagaga 27

<210> 60
 <211> 40
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 60
 aaaaagcata cttggaatgg cccaaggata ggtgtaaag 40

<210> 61
 <211> 3772
 <212> DNA
 <213> Homo sapiens

<400> 61
 gggggctttc ttgggcttgg ctgcttggaa cacctgcctc caaggaccgg 50
 cctcggaggg gtcgccggga aaggaggga agaaggaagg gcggggccgg 100

taaacacgct gctctgggag gcagaggatc gacagaatgt ccccaggaaa 1750
 gttcccaatc actatattgc aatccctgag tggtttctgt cggaaaatgc 1800
 cacggtggct gccgagacca gagcagtcac agcctggatg gaaaaaatcc 1850
 cttttgtgct gggcggcaac ctgcagggcg gcgagctggt ggtggcgtat 1900
 ccctacgacc tgggtcggtc cccctggaag acgcaggaac acacccccac 1950
 ccccgatgac cacgtgttcc gctggctggc ctactcctat gcctccacac 2000
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 cagaaggagg agggcactgt caatggggcc tcctggcaca ccgtcgtctg 2100
 aagtctgaac gatttcagct accttcatc aaactgcttc gaactgtcca 2150
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 tggcattaaa ggcttgggtg gagattcaca tggaaaagga atcccaaacg 2300
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 ctttttgta atgttgctgc ctcatgacc tgggaaaaat gaaaaaaaaa 3700
 aataaagcaa atggtgaagac ccttaaaaaa aaaaaaaaaa aaaaaaaaaa 3750
 aaaaaaaaaa aaaaaaaaaa aa 3772

<210> 62
 <211> 756
 <212> PRT
 <213> Homo sapiens

<400> 62
 Met Ser Arg Pro Gly Thr Ala Thr Pro Ala Leu Ala Leu Val Leu
 1 5 10 15
 Leu Ala Val Thr Leu Ala Gly Val Gly Ala Gln Gly Ala Ala Leu
 20 25 30
 Glu Asp Pro Asp Tyr Tyr Gly Gln Glu Ile Trp Ser Arg Glu Pro
 35 40 45
 Tyr Tyr Ala Arg Pro Glu Pro Glu Leu Glu Thr Phe Ser Pro Pro
 50 55 60
 Leu Pro Ala Gly Pro Gly Glu Glu Trp Glu Arg Arg Pro Gln Glu
 65 70 75
 Pro Arg Pro Pro Lys Arg Ala Thr Lys Pro Lys Lys Ala Pro Lys
 80 85 90
 Arg Glu Lys Ser Ala Pro Glu Pro Pro Pro Pro Gly Lys His Ser
 95 100 105
 Asn Lys Lys Val Met Arg Thr Lys Ser Ser Glu Lys Ala Ala Asn
 110 115 120
 Asp Asp His Ser Val Arg Val Ala Arg Glu Asp Val Arg Glu Ser
 125 130 135
 Cys Pro Pro Leu Gly Leu Glu Thr Leu Lys Ile Thr Asp Phe Gln
 140 145 150
 Leu His Ala Ser Thr Val Lys Arg Tyr Gly Leu Gly Ala His Arg
 155 160 165
 Gly Arg Leu Asn Ile Gln Ala Gly Ile Asn Glu Asn Asp Phe Tyr
 170 175 180
 Asp Gly Ala Trp Cys Ala Gly Arg Asn Asp Leu Gln Gln Trp Ile

| 185 | | | | | 190 | | | | | 195 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Val | Asp | Ala | Arg | Arg | Leu | Thr | Arg | Phe | Thr | Gly | Val | Ile | Thr |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Gln | Gly | Arg | Asn | Ser | Leu | Trp | Leu | Ser | Asp | Trp | Val | Thr | Ser | Tyr |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Lys | Val | Met | Val | Ser | Asn | Asp | Ser | His | Thr | Trp | Val | Thr | Val | Lys |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Asn | Gly | Ser | Gly | Asp | Met | Ile | Phe | Glu | Gly | Asn | Ser | Glu | Lys | Glu |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Ile | Pro | Val | Leu | Asn | Glu | Leu | Pro | Val | Pro | Met | Val | Ala | Arg | Tyr |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Ile | Arg | Ile | Asn | Pro | Gln | Ser | Trp | Phe | Asp | Asn | Gly | Ser | Ile | Cys |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Met | Arg | Met | Glu | Ile | Leu | Gly | Cys | Pro | Leu | Pro | Asp | Pro | Asn | Asn |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Tyr | Tyr | His | Arg | Arg | Asn | Glu | Met | Thr | Thr | Thr | Asp | Asp | Leu | Asp |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Phe | Lys | His | His | Asn | Tyr | Lys | Glu | Met | Arg | Gln | Leu | Met | Lys | Val |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Val | Asn | Glu | Met | Cys | Pro | Asn | Ile | Thr | Arg | Ile | Tyr | Asn | Ile | Gly |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Lys | Ser | His | Gln | Gly | Leu | Lys | Leu | Tyr | Ala | Val | Glu | Ile | Ser | Asp |
| | | | | 350 | | | | | 355 | | | | | 360 |
| His | Pro | Gly | Glu | His | Glu | Val | Gly | Glu | Pro | Glu | Phe | His | Tyr | Ile |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Ala | Gly | Ala | His | Gly | Asn | Glu | Val | Leu | Gly | Arg | Glu | Leu | Leu | Leu |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Leu | Leu | Val | Gln | Phe | Val | Cys | Gln | Glu | Tyr | Leu | Ala | Arg | Asn | Ala |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Arg | Ile | Val | His | Leu | Val | Glu | Glu | Thr | Arg | Ile | His | Val | Leu | Pro |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Ser | Leu | Asn | Pro | Asp | Gly | Tyr | Glu | Lys | Ala | Tyr | Glu | Gly | Gly | Ser |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Glu | Leu | Gly | Gly | Trp | Ser | Leu | Gly | Arg | Trp | Thr | His | Asp | Gly | Ile |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Asp | Ile | Asn | Asn | Asn | Phe | Pro | Asp | Leu | Asn | Thr | Leu | Leu | Trp | Glu |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Ala | Glu | Asp | Arg | Gln | Asn | Val | Pro | Arg | Lys | Val | Pro | Asn | His | Tyr |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Ile | Ala | Ile | Pro | Glu | Trp | Phe | Leu | Ser | Glu | Asn | Ala | Thr | Val | Ala |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Ala | Glu | Thr | Arg | Ala | Val | Ile | Ala | Trp | Met | Glu | Lys | Ile | Pro | Phe |

<210> 64
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 64
cgcgatgtag tggaactcgg gctc 24

<210> 65
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 65
atccgcataa accctcagtc ctggtttgat aatgggagca tctgcatgag 50

<210> 66
<211> 2854
<212> DNA
<213> Homo sapiens

<400> 66
ctaagaggac aagatgaggc ccggcctctc atttctccta gcccttctgt 50
tcttccttgg ccaagctgca ggggatttgg gggatgtggg acctccaatt 100
cccagccccg gcttcagctc tttcccaggt gttgactcca gctccagctt 150
cagctccagc tccaggtcgg gctccagctc cagccgcagc ttaggcagcg 200
gaggttctgt gtcccagttg ttttccaatt tcaccggctc cgtggatgac 250
cgtgggacct gccagtgtc tgtttccttg ccagacacca cctttcccgt 300
ggacagagtg gaacgcttgg aattcacagc tcatgttctt tctcagaagt 350
ttgagaaaga actttctaaa gtgaggaat atgtccaatt aattagtgtg 400
tatgaaaaga aactgttaaa cctaactgtc cgaattgaca tcatggagaa 450
ggataccatt ttttacctg aactggactt cgagctgac aaggtagaag 500
tgaaggagat ggaaaaactg gtcatacagc tgaaggagag ttttggtgga 550
agctcagaaa ttgttgacca gctggaggtg gagataagaa atatgactct 600
cttggtagag aagcttgaga cactagacaa aaacaatgtc cttgccattc 650
gccgagaaat cgtggctctg aagaccaagc tgaaagagtg tgaggcctct 700
aaagatcaaa acaccctgt cgtccaccct cctcccactc caggagctg 750
tggtcatggt ggtgtggtga acatcagcaa accgtctgtg gttcagctca 800
actggagagg gttttcttat ctatatggtg cttggggtag ggattactct 850
ccccagcatc caaacaagg actgtattgg gtggcgccat tgaatacaga 900

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| Ala | Ile | Arg | Arg | Glu 215 | Ile | Val | Ala | Leu | Lys 220 | Thr | Lys | Leu | Lys | Glu 225 |
| Cys | Glu | Ala | Ser | Lys 230 | Asp | Gln | Asn | Thr | Pro 235 | Val | Val | His | Pro | Pro 240 |
| Pro | Thr | Pro | Gly | Ser 245 | Cys | Gly | His | Gly | Gly 250 | Val | Val | Asn | Ile | Ser 255 |
| Lys | Pro | Ser | Val | Val 260 | Gln | Leu | Asn | Trp | Arg 265 | Gly | Phe | Ser | Tyr | Leu 270 |
| Tyr | Gly | Ala | Trp | Gly 275 | Arg | Asp | Tyr | Ser | Pro 280 | Gln | His | Pro | Asn | Lys 285 |
| Gly | Leu | Tyr | Trp | Val 290 | Ala | Pro | Leu | Asn | Thr 295 | Asp | Gly | Arg | Leu | Leu 300 |
| Glu | Tyr | Tyr | Arg | Leu 305 | Tyr | Asn | Thr | Leu | Asp 310 | Asp | Leu | Leu | Leu | Tyr 315 |
| Ile | Asn | Ala | Arg | Glu 320 | Leu | Arg | Ile | Thr | Tyr 325 | Gly | Gln | Gly | Ser | Gly 330 |
| Thr | Ala | Val | Tyr | Asn 335 | Asn | Asn | Met | Tyr | Val 340 | Asn | Met | Tyr | Asn | Thr 345 |
| Gly | Asn | Ile | Ala | Arg 350 | Val | Asn | Leu | Thr | Thr 355 | Asn | Thr | Ile | Ala | Val 360 |
| Thr | Gln | Thr | Leu | Pro 365 | Asn | Ala | Ala | Tyr | Asn 370 | Asn | Arg | Phe | Ser | Tyr 375 |
| Ala | Asn | Val | Ala | Trp 380 | Gln | Asp | Ile | Asp | Phe 385 | Ala | Val | Asp | Glu | Asn 390 |
| Gly | Leu | Trp | Val | Ile 395 | Tyr | Ser | Thr | Glu | Ala 400 | Ser | Thr | Gly | Asn | Met 405 |
| Val | Ile | Ser | Lys | Leu 410 | Asn | Asp | Thr | Thr | Leu 415 | Gln | Val | Leu | Asn | Thr 420 |
| Trp | Tyr | Thr | Lys | Gln 425 | Tyr | Lys | Pro | Ser | Ala 430 | Ser | Asn | Ala | Phe | Met 435 |
| Val | Cys | Gly | Val | Leu 440 | Tyr | Ala | Thr | Arg | Thr 445 | Met | Asn | Thr | Arg | Thr 450 |
| Glu | Glu | Ile | Phe | Tyr 455 | Tyr | Tyr | Asp | Thr | Asn 460 | Thr | Gly | Lys | Glu | Gly 465 |
| Lys | Leu | Asp | Ile | Val 470 | Met | His | Lys | Met | Gln 475 | Glu | Lys | Val | Gln | Ser 480 |
| Ile | Asn | Tyr | Asn | Pro 485 | Phe | Asp | Gln | Lys | Leu 490 | Tyr | Val | Tyr | Asn | Asp 495 |
| Gly | Tyr | Leu | Leu | Asn 500 | Tyr | Asp | Leu | Ser | Val 505 | Leu | Gln | Lys | Pro | Gln 510 |

| | |
|-------|-----|
| <210> | 68 |
| <211> | 410 |
| <212> | DNA |

<213> Homo sapiens

<220>

<221> unsure

<222> 206, 217, 387

<223> unknown base

<400> 68

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cctgtcgtcc accctcctcc cactccaggg agctgtggtc atggtggtgt 100

ggtgaacatc agcaaaccgt ctgtggttca gctcaactgg agagggtttt 150

cittatctata tgggtgcttg ggtagggatt actctcccca gcatccaaac 200

aaaggngatgt attggngggc gccattgaat acagatggga gactggttga 250

gtattataga ctgtacaacc cactggatga tttgctattg tatataaatg 300

ctcgagagtt gcggtacc tatggccaag gtagtggtac agcagtttac 350

aacaacaaca tgtacgtcaa catgtacaac accgggnata ttgccagagt 400

taacctgacc 410

<210> 69

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 69

agctgtggtc atggtggtgt ggtg 24

<210> 70

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 70

ctaccttggc cataggtgat ccgc 24

<210> 71

<211> 42

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 71

catcagcaaa ccgtctgtgg ttcagctcaa ctggagaggg tt 42

<210> 72

<211> 3127

<212> DNA

<213> Homo sapiens

<400> 72

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tcttgtctgt atccgctgct cttgtgacgt tgtggagatg gggagcgtcc 100
tggggctgtg ctccatggcg agctggatac catgtttgtg tggaagtgcc 150
ccgtgtttgc tatgccgatg ctgtcctagt ggaaacaact ccactgtaac 200
tagattgatc tatgcacttt tcttgcttgt tggagtatgt gtagcttgtg 250
taatgttgat accaggaatg gaagaacaac tgaataagat tcctggattt 300
tgtgagaatg agaaagggtg tgtcccttgt aacattttgg ttggctataa 350
agctgtatat cgtttgtgct ttggtttggc tatgttctat cttcttctct 400
ctttactaat gatcaaagtg aagagtagca gtgatcctag agctgcagtg 450
cacaatggat tttggttctt taaatttgct gcagcaattg caattattat 500
tggggcattc ttcattccag aaggaacttt tacaactgtg tggttttatg 550
taggcattgg aggtgccttt tgtttcatcc tcatacaact agtcttactt 600
attgattttg cacattcatg gaatgaatcg tgggttgaag aaatggaaga 650
agggaactcg agatgttggg atgcagcctt gttatcagct acagctctga 700
attatctgct gtcttttagt gctatcgtcc tgttctttgt ctactacact 750
catccagcca gttgttcaga aaacaaggcg ttcattcagt tcaacatgct 800
cctctgcgtt ggtgcttctg taatgtctat actgccaaaa atccaagaat 850
cacaaccaag atctggtttg ttacagtctt cagtaattac agtctacaca 900
atgtatttga catggctcagc tatgaccaat gaaccagaaa caaattgcaa 950
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aggaagggca gtcagtccag tgggtggcatg ctcaaggaat tataggacta 1050
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tagtcagggt aataaactga ctctaacaag tgatgaatct acattaatag 1150
aagatggtgg agctagaagt gatggatcac tggaggatgg ggacgatgtt 1200
caccgagctg tagataatga aagggatggg gtcacttaca gttattcctt 1250
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gctgtctggg tgaaaatctc ttccagttgg attggcatcg tgctgtatgt 1400
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tgagacttct agcatgaaag tcccactttg attattgctt atttgaaaac 1500
agtattccca acttttgtaa agttgtgtat gtttttgctt cccatgtaac 1550

ttctccagtg ttctggcatg aattagatgt tactgcttgt ctttttggtta 1600
 ttttcttacc aagtgcattg atatgtgaag tagaatgaat tgcagaggaa 1650
 agttttatga atatggtgat gagttagtaa aagtggccat tattgggctt 1700
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 ctattttaaa attatattag accttaagct gtttttagcaa gcattaaagc 1800
 aaatgtatgg ctgccttttg aaatatgtga tgtgttgctt ggcaggatac 1850
 tgcaaagaac atgggtttatt ttaaaattta taaacaagtc acttaaagtc 1900
 cagttgtctg aaaaatctta taaggtttta cccttgatac ggaatttaca 1950
 caggtaggga gtgttttagtg gacaatagtg taggttatgg atggaggtgt 2000
 cggtagctaa ttgaataacg agtaaataat cttacttggg tagagatggc 2050
 ctttgccaac aaagtgaact gttttggttg ttttaaactc atgaagtatg 2100
 ggttcagtgg aaatgttttg aactctgaag gatttagaca aggttttgaa 2150
 aaggataatc atgggttaga aggaagtgtt ttgaaagtca ctttgaaagt 2200
 tagttttggg ccagcacgg tagctcacc ttggtaatcc cagcactttg 2250
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 cacatggtga acctgttcta taaaaataat ctggctttga gcatatgcct 2350
 gtggtccagc actgagaggc tagtgaagat tgctgagccc agagccaaag 2400
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 aggaagtaac tgcaaaacca ctaggcttta gtaggtactt atataaaatc 2550
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 aatagctcag atagctaatt aggaaatttc aagttggcca ataatagcat 2650
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 ttacacctca tactgtgata attaatgtga tgtggattgc tgggtgtccag 2750
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 gaaaatcaag cagtatgaga gtttagttat ttgtatgtgt cactagtgtc 2950
 taatgaagct tttaaaatct acaatttctt ctttaaaaat atttattaat 3000
 gtgaatggaa tataacaatt cagcttaatt cccaacctt attctgtgtg 3050
 tagacattgt attccacaat tttgaatggc tgtgttttac ctctaaataa 3100
 atgaattcag agaaaaaaaa aaaaaaa 3127

<210> 73
 <211> 453
 <212> PRT
 <213> Homo sapiens

<400> 73

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Ser | Val | Leu | Gly | Leu | Cys | Ser | Met | Ala | Ser | Trp | Ile | Pro |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Cys | Leu | Cys | Gly | Ser | Ala | Pro | Cys | Leu | Leu | Cys | Arg | Cys | Cys | Pro |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ser | Gly | Asn | Asn | Ser | Thr | Val | Thr | Arg | Leu | Ile | Tyr | Ala | Leu | Phe |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Leu | Val | Gly | Val | Cys | Val | Ala | Cys | Val | Met | Leu | Ile | Pro | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Met | Glu | Glu | Gln | Leu | Asn | Lys | Ile | Pro | Gly | Phe | Cys | Glu | Asn | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Lys | Gly | Val | Val | Pro | Cys | Asn | Ile | Leu | Val | Gly | Tyr | Lys | Ala | Val |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Tyr | Arg | Leu | Cys | Phe | Gly | Leu | Ala | Met | Phe | Tyr | Leu | Leu | Leu | Ser |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Leu | Met | Ile | Lys | Val | Lys | Ser | Ser | Ser | Asp | Pro | Arg | Ala | Ala |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Val | His | Asn | Gly | Phe | Trp | Phe | Phe | Lys | Phe | Ala | Ala | Ala | Ile | Ala |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ile | Ile | Ile | Gly | Ala | Phe | Phe | Ile | Pro | Glu | Gly | Thr | Phe | Thr | Thr |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Val | Trp | Phe | Tyr | Val | Gly | Met | Ala | Gly | Ala | Phe | Cys | Phe | Ile | Leu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ile | Gln | Leu | Val | Leu | Leu | Ile | Asp | Phe | Ala | His | Ser | Trp | Asn | Glu |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Ser | Trp | Val | Glu | Lys | Met | Glu | Glu | Gly | Asn | Ser | Arg | Cys | Trp | Tyr |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Ala | Ala | Leu | Leu | Ser | Ala | Thr | Ala | Leu | Asn | Tyr | Leu | Leu | Ser | Leu |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Val | Ala | Ile | Val | Leu | Phe | Phe | Val | Tyr | Tyr | Thr | His | Pro | Ala | Ser |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Cys | Ser | Glu | Asn | Lys | Ala | Phe | Ile | Ser | Val | Asn | Met | Leu | Leu | Cys |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Val | Gly | Ala | Ser | Val | Met | Ser | Ile | Leu | Pro | Lys | Ile | Gln | Glu | Ser |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Gln | Pro | Arg | Ser | Gly | Leu | Leu | Gln | Ser | Ser | Val | Ile | Thr | Val | Tyr |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Thr | Met | Tyr | Leu | Thr | Trp | Ser | Ala | Met | Thr | Asn | Glu | Pro | Glu | Thr |
| | | | | 275 | | | | | 280 | | | | | 285 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Cys | Asn | Pro | Ser | Leu | Leu | Ser | Ile | Ile | Gly | Tyr | Asn | Thr | Thr | 290 | 295 | 300 |
| Ser | Thr | Val | Pro | Lys | Glu | Gly | Gln | Ser | Val | Gln | Trp | Trp | His | Ala | 305 | 310 | 315 |
| Gln | Gly | Ile | Ile | Gly | Leu | Ile | Leu | Phe | Leu | Leu | Cys | Val | Phe | Tyr | 320 | 325 | 330 |
| Ser | Ser | Ile | Arg | Thr | Ser | Asn | Asn | Ser | Gln | Val | Asn | Lys | Leu | Thr | 335 | 340 | 345 |
| Leu | Thr | Ser | Asp | Glu | Ser | Thr | Leu | Ile | Glu | Asp | Gly | Gly | Ala | Arg | 350 | 355 | 360 |
| Ser | Asp | Gly | Ser | Leu | Glu | Asp | Gly | Asp | Asp | Val | His | Arg | Ala | Val | 365 | 370 | 375 |
| Asp | Asn | Glu | Arg | Asp | Gly | Val | Thr | Tyr | Ser | Tyr | Ser | Phe | Phe | His | 380 | 385 | 390 |
| Phe | Met | Leu | Phe | Leu | Ala | Ser | Leu | Tyr | Ile | Met | Met | Thr | Leu | Thr | 395 | 400 | 405 |
| Asn | Trp | Ser | Arg | Tyr | Glu | Pro | Ser | Arg | Glu | Met | Lys | Ser | Gln | Trp | 410 | 415 | 420 |
| Thr | Ala | Val | Trp | Val | Lys | Ile | Ser | Ser | Ser | Trp | Ile | Gly | Ile | Val | 425 | 430 | 435 |
| Leu | Tyr | Val | Trp | Thr | Leu | Val | Ala | Pro | Leu | Val | Leu | Thr | Asn | Arg | 440 | 445 | 450 |

Asp Phe Asp

<210> 74
 <211> 480
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 48, 163
 <223> unknown base

<400> 74
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 cgttgtggag atggggagcg tccctggggc tgtgtccat ggcgagctgg 100
 ataccatgtt tgtgtggaag tgccccgtgt ttgctatgcc gatgctgtcc 150
 tagtggaac aantccactg taactagatt gatctatgca cttttcttgc 200
 ttgttgagat atgtgtagct tgtgtaatgt tgataccagg aatggaagaa 250
 caactgaata agattcctgg attttgtgag aatgagaaag gtgttgtccc 300
 ttgtaacatt ttggttggt ataaagctgt atatcgtttg tgctttggtt 350
 tggctatgtt ctatcttctt ctctctttac taatgatcaa agtgaagagt 400

agcagtgatc ctagagctgc agtgacacaat ggattttggt tottttaaatt 450
tgctgcagca attgcaatta ttattggggc 480

<210> 75
<211> 438
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 32, 65, 92, 121, 142, 154, 170, 293, 315, 323
<223> unknown base

<400> 75
gttattgtga actttgtgga gatgggaggt cntggggctg tgttccatgg 50
cgagctggat accangtttg tgtggaagtg ccccggtgtt gntatgccga 100
tgctgtccta gtggaaacaa ntccactgta attagattga tntatgcact 150
tttnttgott gttggagtan gtgtagcttg tgtaatgttg ataccaggaa 200
tggaagaaca actgaataag attcctggat tttgtgagaa tgagaaaggt 250
gttgtccctt gtaacatttt gggtggctat aaagctgtat atngtttgtg 300
ctttggtttg gctangttct atnttcttct ctctttacta atgatcaaag 350
tgaagagtag cagtgatcct agagctgcag tgcacaatgg attttggttt 400
tttaaatttg ctgcagcaat tgcaattatt attggggc 438

<210> 76
<211> 473
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 48
<223> unknown base

<400> 76
aagaagctgt ctccatcttg totgtatccg ctgctcttgt gaacgttntg 50
gagatgggga gcgtccttgg ggttgtgctc catggcgagc tggataccat 100
gtttgtgtgg aagtgccccg tgtttgctat gcogatgctg tcctagtgga 150
aacaactcca ctgtaactag attgatctat gcacttttct tgcttggttg 200
agtatgtgta gcttggtgaa tgttgatacc aggaatggaa gaacaactga 250
ataagattcc tggattttgt gagaatgaga aaggtgttgt ccottgtaac 300
attttggttg gctataaagc tgtatatcgt ttgtgctttg gtttggctat 350
gttctatctt cttctctctt tactaatgat caaagtgaag agtagcagtg 400
atcctagagc tgcagtgcac aatggatttt gggtctttta atttgctgca 450
gcaattgcaa ttattatttg ggc 473

<210> 77
<211> 666
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 21, 111
<223> unknown base

<400> 77
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actttttcct tgcttggttg agtatgtgta gctttgtgta atgttgttcc 100
caggattgga ngaacaactg aataagattc ctggattttt gtgagaatga 150
gaaaggtggt gtcccttgt aacatttttg gttggctata aagctgtata 200
tcgtttgtgc tttggtttg ctatgttcta tcttcttctc tctttactaa 250
tgatcaaagt gaagagtagc agtgatccta gagctgcagt gcacaatgga 300
ttttggttct ttaaatttgc tgcagcaatt gcaattatta ttggggcatt 350
cttcattcca gaaggaactt ttacaactgt gtggttttat gtaggcatgg 400
cagggtgcctt ttgtttcatc ctcatacaac tagtcttact tattgatttt 450
gcacattcat ggaatgaatc gtggggtgaa aaaatggaag aagggaactc 500
gagatgttgg tatgcagcct tgttatcagc tacagctctg aattatctgc 550
tgtctttagt tgctatcgtc ctgttctttg tctactacac tcatccagcc 600
agttgttcag aaaacaaggc gttcatcagt gtcaacatgc tcctctgcgt 650
tggtgcttct gtaatg 666

<210> 78
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 78
atgtttgtgt ggaagtgtccc cg 22

<210> 79
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 79
gtcaacatgc tcctctgc 18

<210> 80
<211> 26

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 80
aatccattgt gcaactgcagc tctagg 26

<210> 81
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 81
gagcatgccca ccaactggact gac 23

<210> 82
<211> 54
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 82
gccgatgctg tcctagtggga aacaactcca ctgtaactag attgatctat 50

gcac 54

<210> 83
<211> 3906
<212> DNA
<213> Homo sapiens

<400> 83
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gcgggccggcg ccggcctctc caatggcaaaa tgtgtgtggc tggaggcgag 100
cgcgaggctt tcggcaaagg cagtcgagtg tttgcagacc ggggagagtc 150
ctgtgaaagc agataaaaaga aaacatttat taacgtgtca ttacgagggg 200
agcgcccgcg cggggctgtc gcaactcccc cggaacattt ggctccctcc 250
agctccgaga gaggagaaga agaaagcgga aaagaggcag attcacgtcg 300
tttccagcca agtggacctg atcgatggcc ctctgaatt tatcacgata 350
tttgatttat tagcgatgcc ccctgggttg tgtgttacgc acacacacgt 400
gcacacaagg ctctggctcg cttccctccc tcgtttccag ctctggggcg 450
aatcccacat ctgtttcaac tctccgccga gggcgagcag gagcgagagt 500
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gacgcaactt gagactcccc catccccaaa gaagcaccag atcagcaaaa 600

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 <211> 867
 <212> PRT
 <213> Homo sapiens

<400> 84
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 35 40 45
 Ile Ile Leu Val Leu Thr Asp Asp Gln Asp Val Glu Leu Gly Ser
 50 55 60
 Met Gln Val Met Asn Lys Thr Arg Arg Ile Met Glu Gln Gly Gly
 65 70 75
 Ala His Phe Ile Asn Ala Phe Val Thr Thr Pro Met Cys Cys Pro
 80 85 90
 Ser Arg Ser Ser Ile Leu Thr Gly Lys Tyr Val His Asn His Asn
 95 100 105
 Thr Tyr Thr Asn Asn Glu Asn Cys Ser Ser Pro Ser Trp Gln Ala
 110 115 120
 Gln His Glu Ser Arg Thr Phe Ala Val Tyr Leu Asn Ser Thr Gly
 125 130 135
 Tyr Arg Thr Ala Phe Phe Gly Lys Tyr Leu Asn Glu Tyr Asn Gly
 140 145 150
 Ser Tyr Val Pro Pro Gly Trp Lys Glu Trp Val Gly Leu Leu Lys
 155 160 165
 Asn Ser Arg Phe Tyr Asn Tyr Thr Leu Cys Arg Asn Gly Val Lys
 170 175 180
 Glu Lys His Gly Ser Asp Tyr Ser Lys Asp Tyr Leu Thr Asp Leu
 185 190 195
 Ile Thr Asn Asp Ser Val Ser Phe Phe Arg Thr Ser Lys Lys Met
 200 205 210
 Tyr Pro His Arg Pro Val Leu Met Val Ile Ser His Ala Ala Pro
 215 220 225
 His Gly Pro Glu Asp Ser Ala Pro Gln Tyr Ser Arg Leu Phe Pro
 230 235 240
 Asn Ala Ser Gln His Ile Thr Pro Ser Tyr Asn Tyr Ala Pro Asn
 245 250 255

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Asp | Lys | His | Trp | Ile | Met | Arg | Tyr | Thr | Gly | Pro | Met | Lys | Pro | 260 | 265 | 270 |
| Ile | His | Met | Glu | Phe | Thr | Asn | Met | Leu | Gln | Arg | Lys | Arg | Leu | Gln | 275 | 280 | 285 |
| Thr | Leu | Met | Ser | Val | Asp | Asp | Ser | Met | Glu | Thr | Ile | Tyr | Asn | Met | 290 | 295 | 300 |
| Leu | Val | Glu | Thr | Gly | Glu | Leu | Asp | Asn | Thr | Tyr | Ile | Val | Tyr | Thr | 305 | 310 | 315 |
| Ala | Asp | His | Gly | Tyr | His | Ile | Gly | Gln | Phe | Gly | Leu | Val | Lys | Gly | 320 | 325 | 330 |
| Lys | Ser | Met | Pro | Tyr | Glu | Phe | Asp | Ile | Arg | Val | Pro | Phe | Tyr | Val | 335 | 340 | 345 |
| Arg | Gly | Pro | Asn | Val | Glu | Ala | Gly | Cys | Leu | Asn | Pro | His | Ile | Val | 350 | 355 | 360 |
| Leu | Asn | Ile | Asp | Leu | Ala | Pro | Thr | Ile | Leu | Asp | Ile | Ala | Gly | Leu | 365 | 370 | 375 |
| Asp | Ile | Pro | Ala | Asp | Met | Asp | Gly | Lys | Ser | Ile | Leu | Lys | Leu | Leu | 380 | 385 | 390 |
| Asp | Thr | Glu | Arg | Pro | Val | Asn | Arg | Phe | His | Leu | Lys | Lys | Lys | Met | 395 | 400 | 405 |
| Arg | Val | Trp | Arg | Asp | Ser | Phe | Leu | Val | Glu | Arg | Gly | Lys | Leu | Leu | 410 | 415 | 420 |
| His | Lys | Arg | Asp | Asn | Asp | Lys | Val | Asp | Ala | Gln | Glu | Glu | Asn | Phe | 425 | 430 | 435 |
| Leu | Pro | Lys | Tyr | Gln | Arg | Val | Lys | Asp | Leu | Cys | Gln | Arg | Ala | Glu | 440 | 445 | 450 |
| Tyr | Gln | Thr | Ala | Cys | Glu | Gln | Leu | Gly | Gln | Lys | Trp | Gln | Cys | Val | 455 | 460 | 465 |
| Glu | Asp | Ala | Thr | Gly | Lys | Leu | Lys | Leu | His | Lys | Cys | Lys | Gly | Pro | 470 | 475 | 480 |
| Met | Arg | Leu | Gly | Gly | Ser | Arg | Ala | Leu | Ser | Asn | Leu | Val | Pro | Lys | 485 | 490 | 495 |
| Tyr | Tyr | Gly | Gln | Gly | Ser | Glu | Ala | Cys | Thr | Cys | Asp | Ser | Gly | Asp | 500 | 505 | 510 |
| Tyr | Lys | Leu | Ser | Leu | Ala | Gly | Arg | Arg | Lys | Lys | Leu | Phe | Lys | Lys | 515 | 520 | 525 |
| Lys | Tyr | Lys | Ala | Ser | Tyr | Val | Arg | Ser | Arg | Ser | Ile | Arg | Ser | Val | 530 | 535 | 540 |
| Ala | Ile | Glu | Val | Asp | Gly | Arg | Val | Tyr | His | Val | Gly | Leu | Gly | Asp | 545 | 550 | 555 |
| Ala | Ala | Gln | Pro | Arg | Asn | Leu | Thr | Lys | Arg | His | Trp | Pro | Gly | Ala | 560 | 565 | 570 |

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 <223> Synthetic oligonucleotide probe
 <400> 85
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 <210> 86
 <211> 18
 <212> DNA
 <213> Artificial Sequence
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 <223> Synthetic oligonucleotide probe
 <400> 86
 ggccagctat ctccgcag 18
 <210> 87
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 <212> DNA
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 <223> Synthetic oligonucleotide probe
 <400> 87
 aagggcctgc aagagaag 18
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 <400> 88
 cactgggaca actgtggg 18
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<210> 91
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 91
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<210> 92
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 <212> DNA
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<220>
 <223> Synthetic oligonucleotide probe

<400> 92
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<210> 93
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 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

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<210> 94
 <211> 971
 <212> DNA
 <213> Homo sapiens

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 acggcaggac tgtgacgtgg agaggaaccg tacagctgca gggggaaacc 250
 gagtccgccc ggcccagcct tggcccttcc ggcggcgggg ccacctggga 300
 atctttcacc atcacctgca tcctggccac gtatctcatg tgccgaatgt 350
 gggcctccac caccaccacc acccccgcca caccctcac cacctccacc 400
 accaccacca cccccaccgc caccatcccc gccacgctcg ctgaggctgc 450
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acatggtgcc ccctgataag tgccgatgtg ccgtgggcag catcctgagt 350
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 aaaaaaaaaa aa 1312

<210> 97

<211> 313

<212> PRT

<213> Homo sapiens

<400> 97

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| Met | Ser | Asp | Leu | Leu | Leu | Leu | Gly | Leu | Ile | Gly | Gly | Leu | Thr | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Leu | Leu | Leu | Thr | Leu | Leu | Ala | Phe | Ala | Gly | Tyr | Ser | Gly | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Ala | Gly | Val | Glu | Val | Ser | Ala | Gly | Ser | Pro | Pro | Ile | Arg | Asn |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Val | Thr | Val | Ala | Tyr | Lys | Phe | His | Met | Gly | Leu | Tyr | Gly | Glu | Thr |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Gly | Arg | Leu | Phe | Thr | Glu | Ser | Cys | Ser | Ile | Ser | Pro | Lys | Leu | Arg |
| | | | | 65 | | | | | 70 | | | | | 75 |

Ser Ile Ala Val Tyr Tyr Asp Asn Pro His Met Val Pro Pro Asp
 80 85 90
 Lys Cys Arg Cys Ala Val Gly Ser Ile Leu Ser Glu Gly Glu Glu
 95 100 105
 Ser Pro Ser Pro Glu Leu Ile Asp Leu Tyr Gln Lys Phe Gly Phe
 110 115 120
 Lys Val Phe Ser Phe Pro Ala Pro Ser His Val Val Thr Ala Thr
 125 130 135
 Phe Pro Tyr Thr Thr Ile Leu Ser Ile Trp Leu Ala Thr Arg Arg
 140 145 150
 Val His Pro Ala Leu Asp Thr Tyr Ile Lys Glu Arg Lys Leu Cys
 155 160 165
 Ala Tyr Pro Arg Leu Glu Ile Tyr Gln Glu Asp Gln Ile His Phe
 170 175 180
 Met Cys Pro Leu Ala Arg Gln Gly Asp Phe Tyr Val Pro Glu Met
 185 190 195
 Lys Glu Thr Glu Trp Lys Trp Arg Gly Leu Val Glu Ala Ile Asp
 200 205 210
 Thr Gln Val Asp Gly Thr Gly Ala Asp Thr Met Ser Asp Thr Ser
 215 220 225
 Ser Val Ser Leu Glu Val Ser Pro Gly Ser Arg Glu Thr Ser Ala
 230 235 240
 Ala Thr Leu Ser Pro Gly Ala Ser Ser Arg Gly Trp Asp Asp Gly
 245 250 255
 Asp Thr Arg Ser Glu His Ser Tyr Ser Glu Ser Gly Ala Ser Gly
 260 265 270
 Ser Ser Phe Glu Glu Leu Asp Leu Glu Gly Glu Gly Pro Leu Gly
 275 280 285
 Glu Ser Arg Leu Asp Pro Gly Thr Glu Pro Leu Gly Thr Thr Lys
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 Trp Leu Trp Glu Pro Thr Ala Pro Glu Lys Gly Lys Glu
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 <211> 725
 <212> DNA
 <213> Homo sapiens

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 ctgaggctgg gctcgaaacc gaaagtcccg tccggaccct ccaagtggag 200
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cacgcttcac atacactaca cggaagctt ggtagatgga cgtattattg 300
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gaagagaaac gaaacaagag caaaaagaaa taataaataa taaattttta 700
aaaacttaaa aaaaaaaaaa aaaaa 725

<210> 99
<211> 201
<212> PRT
<213> Homo sapiens

<400> 99
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20 25
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35 40
Pro Pro Glu Pro Cys Ala Glu Pro Ala Ala Phe Gly Asp Thr Leu 60
50 55
His Ile His Tyr Thr Gly Ser Leu Val Asp Gly Arg Ile Ile Asp 75
65 70
Thr Ser Leu Thr Arg Asp Pro Leu Val Ile Glu Leu Gly Gln Lys 90
80 85
Gln Val Ile Pro Gly Leu Glu Gln Ser Leu Leu Asp Met Cys Val 105
95 100
Gly Glu Lys Arg Arg Ala Ile Ile Pro Ser His Leu Ala Tyr Gly 120
110 115
Lys Arg Gly Phe Pro Pro Ser Val Pro Ala Asp Ala Val Val Gln 135
125 130
Tyr Asp Val Glu Leu Ile Ala Leu Ile Arg Ala Asn Tyr Trp Leu 150
140 145
Lys Leu Val Lys Gly Ile Leu Pro Leu Val Gly Met Ala Met Val 165
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170 175
Asn Arg Pro Lys Val Ser Lys Lys Lys Leu Lys Glu Glu Lys Arg

Asn Lys Ser Lys Lys Lys
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<211> 705
<212> DNA
<213> Homo sapiens

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gagaaacgaa acaagagcaa aaagaaataa taaataataa attttaaaaa 700
actta 705

<210> 101
<211> 543
<212> DNA
<213> Homo sapiens

<400> 101
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accctctggt tatagaactt ggccaaaagc aggtgattcc aggtctggag 200
cagagtcttc tcgacatgtg tgtgggagag aagcgaaggg caatcattcc 250
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tactggctaa agctggtgaa gggcattttg cctctggtag ggatggccat 400

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<210> 102
 <211> 1316
 <212> DNA
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<400> 102
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 tggacgtgtt ggaagagaga agcaccatgg tccagccacc aggtccctg 1200
 tgtcccttcc atgggaaggt cttccgctgt gctctcatt ccaagggcag 1250
 gaagatgtga ctcagccatg acacgtgggt ctggtgggat gcacagtcac 1300

tccacatcca ccactg 1316

<210> 103

<211> 157

<212> PRT

<213> Homo sapiens

<400> 103

Met Ser Gly Phe Leu Glu Gly Leu Arg Cys Ser Glu Cys Ile Asp
1 5 10 15
Trp Gly Glu Lys Arg Asn Thr Ile Ala Ser Ile Ala Ala Gly Val
20 25 30
Leu Phe Phe Thr Gly Trp Trp Ile Ile Ile Asp Ala Ala Val Ile
35 40 45
Tyr Pro Thr Met Lys Asp Phe Asn His Ser Tyr His Ala Cys Gly
50 55 60
Val Ile Ala Thr Ile Ala Phe Leu Met Ile Asn Ala Val Ser Asn
65 70 75
Gly Gln Val Arg Gly Asp Ser Tyr Ser Glu Gly Cys Leu Gly Gln
80 85 90
Thr Gly Ala Arg Ile Trp Leu Phe Val Gly Phe Met Leu Ala Phe
95 100 105
Gly Ser Leu Ile Ala Ser Met Trp Ile Leu Phe Gly Gly Tyr Val
110 115 120
Ala Lys Glu Lys Asp Ile Val Tyr Pro Gly Ile Ala Val Phe Phe
125 130 135
Gln Asn Ala Phe Ile Phe Phe Gly Gly Leu Val Phe Lys Phe Gly
140 145 150
Arg Thr Glu Asp Leu Trp Gln
155

<210> 104

<211> 545

<212> DNA

<213> Homo sapiens

<400> 104

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tggatttcta gagggcttga gatgctcaga atgcattgac tggggggaaa 150
agcgcaatac tattgcttcc attgctgctg gtgtactatt ttttacaggc 200
tggtggatta tcatagatgc agctgttatt tatccacca tgaaagattt 250
caaccactca taccatgcct gtgggtgttat agcaaccata gccttcctaa 300
tgattaatgc agtatcgaat ggacaagtcc gaggtgatag ttacagtga 350
ggttgtctgg gtcaaacagg tgctcgcatt tggcttttcg ttggtttcat 400

gttggccttt ggatctctga ttgcatctat gtggattctt tttggaggtt 450
 atgttgctaa agaaaaagac atagtatacc ctggaattgc tgtatttttc 500
 cagaatgcct tcatcttttt tggagggctg gtttttaagt ttggc 545

<210> 105
 <211> 490
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 31, 39, 108, 145, 179, 219, 412, 479
 <223> unknown base

<400> 105
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 agaatgcatg actgggggaa aagcgcaaat actattgctt ccattgctgc 100
 tgggtgtanta ttttttacag gctggtggat tatcatagat gcagntgtta 150
 tttatcccac catgaaagat ttcaaccant cataccatgc ctgtggtgtt 200
 atagcaacca tagccttcnt aatgattaat gcagtatcga atggacaagt 250
 ccgaggtgat agttacagtg aaggttgttt gggtaaaca ggtgctcgca 300
 tttggctttt cgttggtttc atgttggcct ttggatctct gattgcatct 350
 atgtggattc tttttggagg ttatgttgct aaagaaaaag acatagtata 400
 ccctggaatt gntgtatttt tccagaatgc cttcatcttt tttggagggc 450
 tggtttttaa gtttggccgc actgaagant tatggcagtg 490

<210> 106
 <211> 466
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 26, 38, 81, 115, 207, 329, 380, 446, 449
 <223> unknown base

<400> 106
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 aatgttttga ttttttagagg gcttgagatg ntcagaatgc attgactggg 100
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 acaggggtgg ggattatcat agatgcagct gttatttatc ccaccatgaa 200
 agatttnaac cactcatacc atgcctgtgg tgttatagca accatagcct 250
 tcctaataatg taatgcagta tcgaatggac aagtcagagg tgatagttac 300
 agtgaagggt gtttgggtca aacaggtgnt cgcatttggc ttttcggttg 350
 tttcatgttg gcctttggat ttctgattgn attctatgcg gattcttctt 400

ggagggttatg ttgctaaaga aaaagacata gtataccctg gaattnctnt 450

atccccccag aatgcc 466

<210> 107

<211> 377

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 52, 67, 70, 78, 105, 144, 150, 209, 266, 268, 282, 310, 331, 356

<223> unknown base

<400> 107

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antattgctt ccattgntgn tgggtgnta tttttttaca ggctggtgga 100

ttatnataga tgcagctgtt atttatccca ccatgaaaga tttnaaccan 150

tcataccatg cctgtggtgt tatagcaacc atagccttcc taatgattaa 200

tgcagtatng aatggacaag tccgagggtga tagttacagt gaaggttggt 250

tgggtcaaac aggtgntngc atttggcttt tngttggttt catgttggcc 300

tttgatctn tgattgcatt tatgtggatt ntttttgag gttatgttgc 350

taaagnaaaa gacatagtat accctgt 377

<210> 108

<211> 552

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 12, 25, 65, 130, 437, 537

<223> unknown base

<400> 108

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ggcccggcgc ggcngacac cgggttcgg gaaccattgc acgacggggt 100

ggactgacct gaaaaaatg tttggatttn tagagggctt gagatgctca 150

gaatgcattg actgggggga aaagcgcaat actattgctt ccattgctgc 200

tgggtgtacta ttttttacag gctggtggat tatcatagat gcagctgtta 250

tttatccac catgaaagat ttcaaccact cataccatgc ctgtggtggt 300

atagcaacca tagccttcct aatgattaat gcagtatcga atggacaagt 350

cggagggtgat agttacagt aagggttgtct ggggtcaaaca ggtgctcgca 400

tttggtttt cgttggtttc atgttggcct ttggatntct gattgcatct 450

atgtggattc tttttggagg ttatgttgct aaagaaaaag acatagtata 500

ccctggaatt gctgtatttt tccagaatgc cttcatnttt tttggagggc 550

tg 552

<210> 109
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 109
gggtggatgg tactgctgca tcc 23

<210> 110
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 110
tggtgtgctg tgggaaatca gatgtg 26

<210> 111
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 111
gtgtctggag gctgtggccg ttttgttttc ttgggctaaa atcggg 46

<210> 112
<211> 3004
<212> DNA
<213> Homo sapiens

<400> 112
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cogaatcctt tctccgaaga tgtcaaacgg ccccagcgc ccctggtaac 150
tgacaaggag gccaggaaga aggttctcaa acaagctttt tcagccaacc 200
aagtgccgga gaagctggat gtggtggtaa ttggcagtgg ctttgggggc 250
ctggctgcag ctgcaattct agctaaagct ggcaagcgag tcctggtgct 300
ggaacaacat accaaggcag ggggctgctg tcataccttt ggaaagaatg 350
gccttgaatt tgacacagga atccattaca ttgggcgtat ggaagagggc 400
agcattggcc gttttatctt ggaccagatc actgaagggc agctggactg 450
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gccgaaagga gtaccccatg tacagtggag agaaagccta cattcagggc 550

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 tactgccggg gaacgcccgc tgcctgccag gtgtgaagca gcaactgggg 1150
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 tcataccac tgcctacgag tggtttgagg agtggcaggc ggagctgaag 1450
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 atcaggagg agtcagagga atttgcccc tggtcggggc atctcccttg 1900
 acttaccat aatgtctttc tgcattagtt ccttgcacgt ataaagcact 1950
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 cagttatgtc tttggtatca gacatacgaa aggtctcttt gtagttcgtg 2950
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 aaaa 3004

<210> 113
 <211> 610
 <212> PRT
 <213> Homo sapiens

<400> 113
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 1 5 10 15
 Val Leu Cys Lys Val Tyr Leu Gly Leu Phe Ser Gly Ser Ser Pro
 20 25 30
 Asn Pro Phe Ser Glu Asp Val Lys Arg Pro Pro Ala Pro Leu Val
 35 40 45
 Thr Asp Lys Glu Ala Arg Lys Lys Val Leu Lys Gln Ala Phe Ser
 50 55 60
 Ala Asn Gln Val Pro Glu Lys Leu Asp Val Val Val Ile Gly Ser
 65 70 75
 Gly Phe Gly Gly Leu Ala Ala Ala Ala Ile Leu Ala Lys Ala Gly
 80 85 90
 Lys Arg Val Leu Val Leu Glu Gln His Thr Lys Ala Gly Gly Cys
 95 100 105

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | His | Thr | Phe | Gly | Lys | Asn | Gly | Leu | Glu | Phe | Asp | Thr | Gly | Ile | 110 | 115 | 120 |
| His | Tyr | Ile | Gly | Arg | Met | Glu | Glu | Gly | Ser | Ile | Gly | Arg | Phe | Ile | 125 | 130 | 135 |
| Leu | Asp | Gln | Ile | Thr | Glu | Gly | Gln | Leu | Asp | Trp | Ala | Pro | Leu | Ser | 140 | 145 | 150 |
| Ser | Pro | Phe | Asp | Ile | Met | Val | Leu | Glu | Gly | Pro | Asn | Gly | Arg | Lys | 155 | 160 | 165 |
| Glu | Tyr | Pro | Met | Tyr | Ser | Gly | Glu | Lys | Ala | Tyr | Ile | Gln | Gly | Leu | 170 | 175 | 180 |
| Lys | Glu | Lys | Phe | Pro | Gln | Glu | Glu | Ala | Ile | Ile | Asp | Lys | Tyr | Ile | 185 | 190 | 195 |
| Lys | Leu | Val | Lys | Val | Val | Ser | Ser | Gly | Ala | Pro | His | Ala | Ile | Leu | 200 | 205 | 210 |
| Leu | Lys | Phe | Leu | Pro | Leu | Pro | Val | Val | Gln | Leu | Leu | Asp | Arg | Cys | 215 | 220 | 225 |
| Gly | Leu | Leu | Thr | Arg | Phe | Ser | Pro | Phe | Leu | Gln | Ala | Ser | Thr | Gln | 230 | 235 | 240 |
| Ser | Leu | Ala | Glu | Val | Leu | Gln | Gln | Leu | Gly | Ala | Ser | Ser | Glu | Leu | 245 | 250 | 255 |
| Gln | Ala | Val | Leu | Ser | Tyr | Ile | Phe | Pro | Thr | Tyr | Gly | Val | Thr | Pro | 260 | 265 | 270 |
| Asn | His | Ser | Ala | Phe | Ser | Met | His | Ala | Leu | Leu | Val | Asn | His | Tyr | 275 | 280 | 285 |
| Met | Lys | Gly | Gly | Phe | Tyr | Pro | Arg | Gly | Gly | Ser | Ser | Glu | Ile | Ala | 290 | 295 | 300 |
| Phe | His | Thr | Ile | Pro | Val | Ile | Gln | Arg | Ala | Gly | Gly | Ala | Val | Leu | 305 | 310 | 315 |
| Thr | Lys | Ala | Thr | Val | Gln | Ser | Val | Leu | Leu | Asp | Ser | Ala | Gly | Lys | 320 | 325 | 330 |
| Ala | Cys | Gly | Val | Ser | Val | Lys | Lys | Gly | His | Glu | Leu | Val | Asn | Ile | 335 | 340 | 345 |
| Tyr | Cys | Pro | Ile | Val | Val | Ser | Asn | Ala | Gly | Leu | Phe | Asn | Thr | Tyr | 350 | 355 | 360 |
| Glu | His | Leu | Leu | Pro | Gly | Asn | Ala | Arg | Cys | Leu | Pro | Gly | Val | Lys | 365 | 370 | 375 |
| Gln | Gln | Leu | Gly | Thr | Val | Arg | Pro | Gly | Leu | Gly | Met | Thr | Ser | Val | 380 | 385 | 390 |
| Phe | Ile | Cys | Leu | Arg | Gly | Thr | Lys | Glu | Asp | Leu | His | Leu | Pro | Ser | 395 | 400 | 405 |
| Thr | Asn | Tyr | Tyr | Val | Tyr | Tyr | Asp | Thr | Asp | Met | Asp | Gln | Ala | Met | 410 | 415 | 420 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Arg | Tyr | Val | Ser | Met | Pro | Arg | Glu | Glu | Ala | Ala | Glu | His | Ile |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Pro | Leu | Leu | Phe | Phe | Ala | Phe | Pro | Ser | Ala | Lys | Asp | Pro | Thr | Trp |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Glu | Asp | Arg | Phe | Pro | Gly | Arg | Ser | Thr | Met | Ile | Met | Leu | Ile | Pro |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Thr | Ala | Tyr | Glu | Trp | Phe | Glu | Glu | Trp | Gln | Ala | Glu | Leu | Lys | Gly |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Lys | Arg | Gly | Ser | Asp | Tyr | Glu | Thr | Phe | Lys | Asn | Ser | Phe | Val | Glu |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Ala | Ser | Met | Ser | Val | Val | Leu | Lys | Leu | Phe | Pro | Gln | Leu | Glu | Gly |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Lys | Val | Glu | Ser | Val | Thr | Ala | Gly | Ser | Pro | Leu | Thr | Asn | Gln | Phe |
| | | | | 515 | | | | | 520 | | | | | 525 |
| Tyr | Leu | Ala | Ala | Pro | Arg | Gly | Ala | Cys | Tyr | Gly | Ala | Asp | His | Asp |
| | | | | 530 | | | | | 535 | | | | | 540 |
| Leu | Gly | Arg | Leu | His | Pro | Cys | Val | Met | Ala | Ser | Leu | Arg | Ala | Gln |
| | | | | 545 | | | | | 550 | | | | | 555 |
| Ser | Pro | Ile | Pro | Asn | Leu | Tyr | Leu | Thr | Gly | Gln | Asp | Ile | Phe | Thr |
| | | | | 560 | | | | | 565 | | | | | 570 |
| Cys | Gly | Leu | Val | Gly | Ala | Leu | Gln | Gly | Ala | Leu | Leu | Cys | Ser | Ser |
| | | | | 575 | | | | | 580 | | | | | 585 |
| Ala | Ile | Leu | Lys | Arg | Asn | Leu | Tyr | Ser | Asp | Leu | Lys | Asn | Leu | Asp |
| | | | | 590 | | | | | 595 | | | | | 600 |
| Ser | Arg | Ile | Arg | Ala | Gln | Lys | Lys | Lys | Asn | | | | | |
| | | | | 605 | | | | | 610 | | | | | |

<210> 114
 <211> 1701
 <212> DNA
 <213> Homo sapiens

<400> 114
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 gatagggctg acgctgctgc tgtgtgcggt gctgctgagc ttggcctcgg 150
 cgtcctcgga tgaagaaggc agccaggatg aatccttaga ttccaagact 200
 actttgacat cagatgagtc agtaaaggac catactactg caggcagagt 250
 agttgctggt caaatatttc ttgattcaga agaatctgaa ttagaatcct 300
 ctattcaaga agaggaagac agcctcaaga gccaagaggg ggaaagtgtc 350
 acagaagata tcagctttct agagtctcca aatccagaaa acaaggacta 400
 tgaagagcca aagaaagtac ggaaaccagc ttgaccgcc attgaaggca 450

Glu Ser Leu Asp Ser Lys Thr Thr Leu Thr Ser Asp Glu Ser Val
35 40 45
Lys Asp His Thr Thr Ala Gly Arg Val Val Ala Gly Gln Ile Phe
50 55 60
Leu Asp Ser Glu Glu Ser Glu Leu Glu Ser Ser Ile Gln Glu Glu
65 70 75
Glu Asp Ser Leu Lys Ser Gln Glu Gly Glu Ser Val Thr Glu Asp
80 85 90
Ile Ser Phe Leu Glu Ser Pro Asn Pro Glu Asn Lys Asp Tyr Glu
95 100 105
Glu Pro Lys Lys Val Arg Lys Pro Ala Leu Thr Ala Ile Glu Gly
110 115 120
Thr Ala His Gly Glu Pro Cys His Phe Pro Phe Leu Phe Leu Asp
125 130 135
Lys Glu Tyr Asp Glu Cys Thr Ser Asp Gly Arg Glu Asp Gly Arg
140 145 150
Leu Trp Cys Ala Thr Thr Tyr Asp Tyr Lys Ala Asp Glu Lys Trp
155 160 165
Gly Phe Cys Glu Thr Glu Glu Glu Ala Ala Lys Arg Arg Gln Met
170 175 180
Gln Glu Ala Glu Met Met Tyr Gln Thr Gly Met Lys Ile Leu Asn
185 190 195
Gly Ser Asn Lys Lys Ser Gln Lys Arg Glu Ala Tyr Arg Tyr Leu
200 205 210
Gln Lys Ala Ala Ser Met Asn His Thr Lys Ala Leu Glu Arg Val
215 220 225
Ser Tyr Ala Leu Leu Phe Gly Asp Tyr Leu Pro Gln Asn Ile Gln
230 235 240
Ala Ala Arg Glu Met Phe Glu Lys Leu Thr Glu Glu Gly Ser Pro
245 250 255
Lys Gly Gln Thr Ala Leu Gly Phe Leu Tyr Ala Ser Gly Leu Gly
260 265 270
Val Asn Ser Ser Gln Ala Lys Ala Leu Val Tyr Tyr Thr Phe Gly
275 280 285
Ala Leu Gly Gly Asn Leu Ile Ala His Met Val Leu Val Ser Arg
290 295 300

Leu

<210> 116

<211> 584

<212> DNA

<213> Homo sapiens

<400> 116

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 agctggatgc actgctgggtc ttcccaggcc aagtggctca actctcctgc 200
 acgctcagcc cccagcacgt caccatcagg gactacgggtg tgtcctggta 250
 ccagcagcgg gcaggcagtg cccctcgata tctcctctac taccgctcgg 300
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 aaggatgagg cccacaatgc ctgtgtcctc accattagtc ccgtgcagcc 400
 tgaagacgac gcggattact actgctctgt tggctacggc tttagtcctt 450
 aggggtgggg tgtgagatgg gtgcctcccc tctgcctccc atttctgccc 500
 ctgaccttgg gtccctttta aactttctct gagccttgct tcccctctgt 550
 aaaatgggtt aataatattc aacatgtcaa caac 584

<210> 117
 <211> 123
 <212> PRT
 <213> Homo sapiens

<400> 117
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 1 5 10 15
 Ser Val Ser Gln Thr Val Leu Ala Gln Leu Asp Ala Leu Leu Val
 20 25 30
 Phe Pro Gly Gln Val Ala Gln Leu Ser Cys Thr Leu Ser Pro Gln
 35 40 45
 His Val Thr Ile Arg Asp Tyr Gly Val Ser Trp Tyr Gln Gln Arg
 50 55 60
 Ala Gly Ser Ala Pro Arg Tyr Leu Leu Tyr Tyr Arg Ser Glu Glu
 65 70 75
 Asp His His Arg Pro Ala Asp Ile Pro Asp Arg Phe Ser Ala Ala
 80 85 90
 Lys Asp Glu Ala His Asn Ala Cys Val Leu Thr Ile Ser Pro Val
 95 100 105
 Gln Pro Glu Asp Asp Ala Asp Tyr Tyr Cys Ser Val Gly Tyr Gly
 110 115 120
 Phe Ser Pro

<210> 118
 <211> 3402
 <212> DNA
 <213> Homo sapiens

<400> 118

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 ccccgccgcc cgcccgctga gccccccgcc gaggtccgga caggccgaga 150
 tgacgccgag cccctgttg ctgctcctgc tgccgcgct gctgctgggg 200
 gccttccac cggccgccgc cgcccgaggc ccccaaaga tggcggacaa 250
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 ggtcaagag gaccccgcca gccagcagtg ggcaagacc cgcttcacac 600
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| Met | Thr | Pro | Ser | Pro | Leu | Leu | Leu | Leu | Leu | Leu | Pro | Pro | Leu | Leu | 1 | 5 | 10 | 15 |
| Leu | Gly | Ala | Phe | Pro | Pro | Ala | Ala | Ala | Ala | Arg | Gly | Pro | Pro | Lys | 20 | 25 | 30 | |
| Met | Ala | Asp | Lys | Val | Val | Pro | Arg | Gln | Val | Ala | Arg | Leu | Gly | Arg | 35 | 40 | 45 | |
| Thr | Val | Arg | Leu | Gln | Cys | Pro | Val | Glu | Gly | Asp | Pro | Pro | Pro | Leu | 50 | 55 | 60 | |
| Thr | Met | Trp | Thr | Lys | Asp | Gly | Arg | Thr | Ile | His | Ser | Gly | Trp | Ser | 65 | 70 | 75 | |
| Arg | Phe | Arg | Val | Leu | Pro | Gln | Gly | Leu | Lys | Val | Lys | Gln | Val | Glu | 80 | 85 | 90 | |
| Arg | Glu | Asp | Ala | Gly | Val | Tyr | Val | Cys | Lys | Ala | Thr | Asn | Gly | Phe | 95 | 100 | 105 | |
| Gly | Ser | Leu | Ser | Val | Asn | Tyr | Thr | Leu | Val | Val | Leu | Asp | Asp | Ile | 110 | 115 | 120 | |
| Ser | Pro | Gly | Lys | Glu | Ser | Leu | Gly | Pro | Asp | Ser | Ser | Ser | Gly | Gly | 125 | 130 | 135 | |
| Gln | Glu | Asp | Pro | Ala | Ser | Gln | Gln | Trp | Ala | Arg | Pro | Arg | Phe | Thr | 140 | 145 | 150 | |
| Gln | Pro | Ser | Lys | Met | Arg | Arg | Arg | Val | Ile | Ala | Arg | Pro | Val | Gly | 155 | 160 | 165 | |
| Ser | Ser | Val | Arg | Leu | Lys | Cys | Val | Ala | Ser | Gly | His | Pro | Arg | Pro | 170 | 175 | 180 | |
| Asp | Ile | Thr | Trp | Met | Lys | Asp | Asp | Gln | Ala | Leu | Thr | Arg | Pro | Glu | 185 | 190 | 195 | |
| Ala | Ala | Glu | Pro | Arg | Lys | Lys | Lys | Trp | Thr | Leu | Ser | Leu | Lys | Asn | 200 | 205 | 210 | |
| Leu | Arg | Pro | Glu | Asp | Ser | Gly | Lys | Tyr | Thr | Cys | Arg | Val | Ser | Asn | 215 | 220 | 225 | |
| Arg | Ala | Gly | Ala | Ile | Asn | Ala | Thr | Tyr | Lys | Val | Asp | Val | Ile | Gln | 230 | 235 | 240 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Thr | Arg | Ser | Lys | Pro | Val | Leu | Thr | Gly | Thr | His | Pro | Val | Asn |
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| Thr | Thr | Val | Asp | Phe | Gly | Gly | Thr | Thr | Ser | Phe | Gln | Cys | Lys | Val |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Arg | Ser | Asp | Val | Lys | Pro | Val | Ile | Gln | Trp | Leu | Lys | Arg | Val | Glu |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Tyr | Gly | Ala | Glu | Gly | Arg | His | Asn | Ser | Thr | Ile | Asp | Val | Gly | Gly |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Gln | Lys | Phe | Val | Val | Leu | Pro | Thr | Gly | Asp | Val | Trp | Ser | Arg | Pro |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Asp | Gly | Ser | Tyr | Leu | Asn | Lys | Leu | Leu | Ile | Thr | Arg | Ala | Arg | Gln |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Asp | Asp | Ala | Gly | Met | Tyr | Ile | Cys | Leu | Gly | Ala | Asn | Thr | Met | Gly |
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| Tyr | Ser | Phe | Arg | Ser | Ala | Phe | Leu | Thr | Val | Leu | Pro | Asp | Pro | Lys |
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| Pro | Pro | Gly | Pro | Pro | Val | Ala | Ser | Ser | Ser | Ser | Ala | Thr | Ser | Leu |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Pro | Trp | Pro | Val | Val | Ile | Gly | Ile | Pro | Ala | Gly | Ala | Val | Phe | Ile |
| | | | | 380 | | | | | 385 | | | | | 390 |
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| Cys | Thr | Pro | Ala | Pro | Ala | Pro | Pro | Leu | Pro | Gly | His | Arg | Pro | Pro |
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| Gly | Thr | Ala | Arg | Asp | Arg | Ser | Gly | Asp | Lys | Asp | Leu | Pro | Ser | Leu |
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| Gly | Ser | Pro | Ala | Ala | Pro | Gln | His | Leu | Leu | Gly | Pro | Gly | Pro | Val |
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| His | Thr | His | Thr | His | Ser | His | Thr | His | Ser | His | Val | Glu | Gly | Lys |
| | | | | 485 | | | | | 490 | | | | | 495 |
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 Pro Ala Asp Thr Leu Glu Ser Pro Gly Glu Trp Thr Thr Trp Phe
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 Asn Ile Asp Tyr Pro Gly Gly Lys Gly Asp Tyr Glu Arg Leu Asp
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 Ala Ile Arg Phe Tyr Tyr Gly Asp Arg Val Cys Ala Arg Pro Leu
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 Arg Leu Glu Ala Arg Thr Thr Asp Trp Thr Pro Ala Gly Ser Thr
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 Gly Gln Val Val His Gly Ser Pro Arg Glu Gly Phe Trp Cys Leu
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 170 175 180
 Met Val Ser Leu Cys Ser Glu Ala Ser Glu Glu Gly Gln His Cys
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 Met Gly Gln Asp Cys Thr Ala Cys Asp Leu Thr Cys Pro Met Gly
 200 205 210

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Val | Asn | Ala | Asp | Cys | Asp | Ala | Cys | Met | Cys | Gln | Asp | Phe | Met |
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| Leu | His | Gly | Ala | Val | Ser | Leu | Pro | Gly | Gly | Ala | Pro | Ala | Ser | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ala | Ala | Ile | Tyr | Leu | Leu | Thr | Lys | Thr | Pro | Lys | Leu | Leu | Thr | Gln |
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| Thr | Asp | Ser | Asp | Gly | Arg | Phe | Arg | Ile | Pro | Gly | Leu | Cys | Pro | Asp |
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| Gly | Lys | Ser | Ile | Leu | Lys | Ile | Thr | Lys | Val | Lys | Phe | Ala | Pro | Ile |
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| Val | Leu | Thr | Met | Pro | Lys | Thr | Ser | Leu | Lys | Ala | Ala | Thr | Ile | Lys |
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| Lys | Ala | Thr | Gly | Lys | Pro | Arg | Pro | Asp | Lys | Tyr | Phe | Trp | Tyr | His |
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| Asn | Asp | Thr | Leu | Leu | Asp | Pro | Ser | Leu | Tyr | Lys | His | Glu | Ser | Lys |
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| Gln | Leu | Ile | Val | Thr | Ala | Ser | Asp | Glu | Thr | Pro | Cys | Asn | Pro | Val |
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| Pro | Glu | Ser | Tyr | Leu | Ile | Arg | Leu | Pro | His | Asp | Cys | Phe | Gln | Asn |
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| Ala | Thr | Asn | Ser | Phe | Tyr | Tyr | Asp | Val | Gly | Arg | Cys | Pro | Val | Lys |
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| Thr | Cys | Ala | Gly | Gln | Gln | Asp | Asn | Gly | Ile | Arg | Cys | Arg | Asp | Ala |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Val | Gln | Asn | Cys | Cys | Gly | Ile | Ser | Lys | Thr | Glu | Glu | Arg | Glu | Ile |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Gln | Cys | Ser | Gly | Tyr | Thr | Leu | Pro | Thr | Lys | Val | Ala | Lys | Glu | Cys |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Ser | Cys | Gln | Arg | Cys | Thr | Glu | Thr | Arg | Ser | Ile | Val | Arg | Gly | Arg |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Val | Ser | Ala | Ala | Asp | Asn | Gly | Glu | Pro | Met | Arg | Phe | Gly | His | Val |
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| Tyr | Met | Gly | Asn | Ser | Arg | Val | Ser | Met | Thr | Gly | Tyr | Lys | Gly | Thr |
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| Phe | Thr | Leu | His | Val | Pro | Gln | Asp | Thr | Glu | Arg | Leu | Val | Leu | Thr | |
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| Phe | Val | Asp | Arg | Leu | Gln | Lys | Phe | Val | Asn | Thr | Thr | Lys | Val | Leu | |
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| Pro | Phe | Asn | Lys | Lys | Gly | Ser | Ala | Val | Phe | His | Glu | Ile | Lys | Met | |
| | | | | 560 | | | | | 565 | | | | | 570 | |
| Leu | Arg | Arg | Lys | Glu | Pro | Ile | Thr | Leu | Glu | Ala | Met | Glu | Thr | Asn | |
| | | | | 575 | | | | | 580 | | | | | 585 | |
| Ile | Ile | Pro | Leu | Gly | Glu | Val | Val | Gly | Glu | Asp | Pro | Met | Ala | Glu | |
| | | | | 590 | | | | | 595 | | | | | 600 | |
| Leu | Glu | Ile | Pro | Ser | Arg | Ser | Phe | Tyr | Arg | Gln | Asn | Gly | Glu | Pro | |
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| Tyr | Ile | Gly | Lys | Val | Lys | Ala | Ser | Val | Thr | Phe | Leu | Asp | Pro | Arg | |
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| Asn | Ile | Ser | Thr | Ala | Thr | Ala | Ala | Gln | Thr | Asp | Leu | Asn | Phe | Ile | |
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| Asn | Asp | Glu | Gly | Asp | Thr | Phe | Pro | Leu | Arg | Thr | Tyr | Gly | Met | Phe | |
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| Ser | Val | Asp | Phe | Arg | Asp | Glu | Val | Thr | Ser | Glu | Pro | Leu | Asn | Ala | |
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| Gly | Lys | Val | Lys | Val | His | Leu | Asp | Ser | Thr | Gln | Val | Lys | Met | Pro | |
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| | | | | 710 | | | | | 715 | | | | | 720 | |
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| | | | | 725 | | | | | 730 | | | | | 735 | |
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| Arg | Cys | Phe | Val | Lys | Val | Arg | Ala | Tyr | Arg | Ser | Glu | Arg | Phe | Leu | |
| | | | | 755 | | | | | 760 | | | | | 765 | |
| Pro | Ser | Glu | Gln | Ile | Gln | Gly | Val | Val | Ile | Ser | Val | Ile | Asn | Leu | |
| | | | | 770 | | | | | 775 | | | | | 780 | |
| Glu | Pro | Arg | Thr | Gly | Phe | Leu | Ser | Asn | Pro | Arg | Ala | Trp | Gly | Arg | |
| | | | | 785 | | | | | 790 | | | | | 795 | |
| Phe | Asp | Ser | Val | Ile | Thr | Gly | Pro | Asn | Gly | Ala | Cys | Val | Pro | Ala | |
| | | | | 800 | | | | | 805 | | | | | 810 | |
| Phe | Cys | Asp | Asp | Gln | Ser | Pro | Asp | Ala | Tyr | Ser | Ala | Tyr | Val | Leu | |
| | | | | 815 | | | | | 820 | | | | | 825 | |
| Ala | Ser | Leu | Ala | Gly | Glu | Glu | Leu | Gln | Ala | Val | Glu | Ser | Ser | Pro | |
| | | | | 830 | | | | | 835 | | | | | 840 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|--|
| Lys | Phe | Asn | Pro | Asn | Ala | Ile | Gly | Val | Pro | Gln | Pro | Tyr | Leu | Asn | |
| | | | | 845 | | | | | 850 | | | | | 855 | |
| Lys | Leu | Asn | Tyr | Arg | Arg | Thr | Asp | His | Glu | Asp | Pro | Arg | Val | Lys | |
| | | | | 860 | | | | | 865 | | | | | 870 | |
| Lys | Thr | Ala | Phe | Gln | Ile | Ser | Met | Ala | Lys | Pro | Arg | Pro | Asn | Ser | |
| | | | | 875 | | | | | 880 | | | | | 885 | |
| Ala | Glu | Glu | Ser | Asn | Gly | Pro | Ile | Tyr | Ala | Phe | Glu | Asn | Leu | Arg | |
| | | | | 890 | | | | | 895 | | | | | 900 | |
| Ala | Cys | Glu | Glu | Ala | Pro | Pro | Ser | Ala | Ala | His | Phe | Arg | Phe | Tyr | |
| | | | | 905 | | | | | 910 | | | | | 915 | |
| Gln | Ile | Glu | Gly | Asp | Arg | Tyr | Asp | Tyr | Asn | Thr | Val | Pro | Phe | Asn | |
| | | | | 920 | | | | | 925 | | | | | 930 | |
| Glu | Asp | Asp | Pro | Met | Ser | Trp | Thr | Glu | Asp | Tyr | Leu | Ala | Trp | Trp | |
| | | | | 935 | | | | | 940 | | | | | 945 | |
| Pro | Lys | Pro | Met | Glu | Phe | Arg | Ala | Cys | Tyr | Ile | Lys | Val | Lys | Ile | |
| | | | | 950 | | | | | 955 | | | | | 960 | |
| Val | Gly | Pro | Leu | Glu | Val | Asn | Val | Arg | Ser | Arg | Asn | Met | Gly | Gly | |
| | | | | 965 | | | | | 970 | | | | | 975 | |
| Thr | His | Arg | Arg | Thr | Val | Gly | Lys | Leu | Tyr | Gly | Ile | Arg | Asp | Val | |
| | | | | 980 | | | | | 985 | | | | | 990 | |
| Arg | Ser | Thr | Arg | Asp | Arg | Asp | Gln | Pro | Asn | Val | Ser | Ala | Ala | Cys | |
| | | | | 995 | | | | | 1000 | | | | | 1005 | |
| Leu | Glu | Phe | Lys | Cys | Ser | Gly | Met | Leu | Tyr | Asp | Gln | Asp | Arg | Val | |
| | | | | 1010 | | | | | 1015 | | | | | 1020 | |
| Asp | Arg | Thr | Leu | Val | Lys | Val | Ile | Pro | Gln | Gly | Ser | Cys | Arg | Arg | |
| | | | | 1025 | | | | | 1030 | | | | | 1035 | |
| Ala | Ser | Val | Asn | Pro | Met | Leu | His | Glu | Tyr | Leu | Val | Asn | His | Leu | |
| | | | | 1040 | | | | | 1045 | | | | | 1050 | |
| Pro | Leu | Ala | Val | Asn | Asn | Asp | Thr | Ser | Glu | Tyr | Thr | Met | Leu | Ala | |
| | | | | 1055 | | | | | 1060 | | | | | 1065 | |
| Pro | Leu | Asp | Pro | Leu | Gly | His | Asn | Tyr | Gly | Ile | Tyr | Thr | Val | Thr | |
| | | | | 1070 | | | | | 1075 | | | | | 1080 | |
| Asp | Gln | Asp | Pro | Arg | Thr | Ala | Lys | Glu | Ile | Ala | Leu | Gly | Arg | Cys | |
| | | | | 1085 | | | | | 1090 | | | | | 1095 | |
| Phe | Asp | Gly | Thr | Ser | Asp | Gly | Ser | Ser | Arg | Ile | Met | Lys | Ser | Asn | |
| | | | | 1100 | | | | | 1105 | | | | | 1110 | |
| Val | Gly | Val | Ala | Leu | Thr | Phe | Asn | Cys | Val | Glu | Arg | Gln | Val | Gly | |
| | | | | 1115 | | | | | 1120 | | | | | 1125 | |
| Arg | Gln | Ser | Ala | Phe | Gln | Tyr | Leu | Gln | Ser | Thr | Pro | Ala | Gln | Ser | |
| | | | | 1130 | | | | | 1135 | | | | | 1140 | |
| Pro | Ala | Ala | Gly | Thr | Val | Gln | Gly | Arg | Val | Pro | Ser | Arg | Arg | Gln | |
| | | | | 1145 | | | | | 1150 | | | | | 1155 | |

Gln Arg Ala Ser Arg Gly Gly Gln Arg Gln Gly Gly Val Val Ala
 1160 1165 1170

Ser Leu Arg Phe Pro Arg Val Ala Gln Gln Pro Leu Ile Asn
 1175 1180

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 <213> Artificial Sequence

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 <223> Synthetic oligonucleotide probe

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<210> 126
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

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 <211> 2819
 <212> DNA
 <213> Homo sapiens

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 ttgggatctg ctttgagggtc ccatcttcat ttaaaaaaaaa atacagagac 150
 ctacctacc gtacgcatac atacatatgt gtatatatat gtaaaactaga 200
 caaagatcgc agatcataaa gcaagctctg ctttagtttc caagaagatt 250
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 ttgggttacg gtgtcctcag tgatgcagcc ctaccctttg gtttggggac 350
 attatgattt gtgtaagact cagatttaca cggaagaagg gaaagtttgg 400
 gattacatgg cctgccagcc ggaatccacg gacatgacaa aatatctgaa 450

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 aggggtataca acaaatagca aaataatcca ctttgaaatc aaagacaggt 950
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 cagctggata caaccaagaa actcagagat ttcttttacag tcacagacct 1050
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 gcaagaagaa ttatcagggc cgaccttggg gtccaggctc ctatctcccc 1300
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 tacgaatgtc tgcgacaacg agctcctgca ctgccagaac ggagggacgt 1400
 gccacaacaa cgtgcgctgc ctgtgcccgg ccgcatacac gggcatcctc 1450
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 caggaatttg tattgcaatt tcttaagatg aaaggaacag ccaccaagca 2650
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 acgaatttag ttcccaggaa gatggattga tggtcactag cttggacaac 2750
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 aaaaaaaaaa aaaaaaaaaa 2819

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 <211> 438
 <212> PRT
 <213> Homo sapiens

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 Asp Leu Cys Lys Thr Gln Ile Tyr Thr Glu Glu Gly Lys Val Trp
 35 40 45
 Asp Tyr Met Ala Cys Gln Pro Glu Ser Thr Asp Met Thr Lys Tyr
 50 55 60
 Leu Lys Val Lys Leu Asp Pro Pro Asp Ile Thr Cys Gly Asp Pro
 65 70 75
 Pro Glu Thr Phe Cys Ala Met Gly Asn Pro Tyr Met Cys Asn Asn
 80 85 90
 Glu Cys Asp Ala Ser Thr Pro Glu Leu Ala His Pro Pro Glu Leu
 95 100 105
 Met Phe Asp Phe Glu Gly Arg His Pro Ser Thr Phe Trp Gln Ser
 110 115 120
 Ala Thr Trp Lys Glu Tyr Pro Lys Pro Leu Gln Val Asn Ile Thr

[illegible]

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<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 130
tcgattatgg acgaacatgg cagc 24

<210> 131
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 131
ttctgagatc cctcatcctc 20

<210> 132
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 132
aggttcaggg acagcaagtt tggg 24

<210> 133
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 133
tttgctggac ctcggctacg gaattggctt ccctctacgg acagctggat 50

<210> 134
<211> 1493
<212> DNA
<213> Homo sapiens

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ccgggcgagg tgtcctcatg acttctcttg tggaccatgt ccgtgatctt 150
ttttgcctgc gtggtacggg taagggatgg actgcccctc tcagcctcta 200
ctgattttta ccacacccaa gatttttttg aatggaggag acggctcaag 250
agttagcct tgcgactggc ccagtatcca ggtcgagggt ctgcagaagg 300

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gln | Tyr | Pro | Gly | Arg | Gly | Ser | Ala | Glu | Gly | Cys | Asp | Phe | Ser | Ile | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| His | Phe | Ser | Ser | Phe | Gly | Asp | Val | Ala | Cys | Met | Ala | Ile | Cys | Ser | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Cys | Gln | Cys | Pro | Ala | Ala | Met | Ala | Phe | Cys | Phe | Leu | Glu | Thr | Leu | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Trp | Trp | Glu | Phe | Thr | Ala | Ser | Tyr | Asp | Thr | Thr | Cys | Ile | Gly | Leu | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Ala | Ser | Arg | Pro | Tyr | Ala | Phe | Leu | Glu | Phe | Asp | Ser | Ile | Ile | Gln | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Lys | Val | Lys | Trp | His | Phe | Asn | Tyr | Val | Ser | Ser | Ser | Gln | Met | Glu | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Cys | Ser | Leu | Glu | Lys | Ile | Gln | Glu | Glu | Leu | Lys | Leu | Gln | Pro | Pro | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Ala | Val | Leu | Thr | Leu | Glu | Asp | Thr | Asp | Val | Ala | Asn | Gly | Val | Met | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Asn | Gly | His | Thr | Pro | Met | His | Leu | Glu | Pro | Ala | Pro | Asn | Phe | Arg | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Met | Glu | Pro | Val | Thr | Ala | Leu | Gly | Ile | Leu | Ser | Leu | Ile | Leu | Asn | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ile | Met | Cys | Ala | Ala | Leu | Asn | Leu | Ile | Arg | Gly | Val | His | Leu | Ala | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Glu | His | Ser | Leu | Gln | Asp | Pro | Arg | Ser | Trp | Phe | Cys | Trp | Leu | Asp | |
| | | | | 215 | | | | | 220 | | | | | 225 | |

Gln Thr Ser

<210> 136
 <211> 239
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 39, 61, 143, 209
 <223> unknown base

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 tcattcagaa agtgaagtgg cattttaact atgtaagttc ctntcagatg 150
 gagtgcagct tggaaaaaat tcaggaggag ctcaagttgc agcctccagc 200
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<210> 137
 <211> 2300
 <212> DNA

<213> Homo sapiens

<400> 137

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ccctttaaaa cgaggcgggt ggtgcctgcc cctttaaggg cggggcgtcc 150
ggacgactgt atctgagccc cagactgccc cgagtttctg tcgcaggctg 200
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tgtgtatcc tggaggggct ttggaccacc tgaaagacca aggggatagg 2250
gaggaggagg cttcagccat cagcaataaa gttgatccca gggaaaaaaa 2300

<210> 138
<211> 489
<212> PRT
<213> Homo sapiens

<400> 138
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Phe His Glu Arg Ile Arg Glu Cys Ile Ile Ser Thr Leu Leu Phe
20 25 30
Ala Thr Leu Tyr Ile Leu Cys His Ile Phe Leu Thr Arg Phe Lys
35 40 45
Lys Pro Ala Glu Phe Thr Thr Val Asp Asp Glu Asp Ala Thr Val
50 55 60
Asn Lys Ile Ala Leu Glu Leu Cys Thr Phe Thr Leu Ala Ile Ala
65 70 75
Leu Gly Ala Val Leu Leu Leu Pro Phe Ser Ile Ile Ser Asn Glu
80 85 90
Val Leu Leu Ser Leu Pro Arg Asn Tyr Tyr Ile Gln Trp Leu Asn
95 100 105
Gly Ser Leu Ile His Gly Leu Trp Asn Leu Val Phe Leu Phe Pro
110 115 120
Asn Leu Ser Leu Ile Phe Leu Met Pro Phe Ala Tyr Phe Phe Thr

| 125 | | | | | | | | | | 130 | | | | | 135 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Glu | Ser | Glu | Gly | Phe | Ala | Gly | Ser | Arg | Lys | Gly | Val | Leu | Gly | Arg | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Val | Tyr | Glu | Thr | Val | Val | Met | Leu | Met | Leu | Leu | Thr | Leu | Leu | Val | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Leu | Gly | Met | Val | Trp | Val | Ala | Ser | Ala | Ile | Val | Asp | Lys | Asn | Lys | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Ala | Asn | Arg | Glu | Ser | Leu | Tyr | Asp | Phe | Trp | Glu | Tyr | Tyr | Leu | Pro | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Tyr | Leu | Tyr | Ser | Cys | Ile | Ser | Phe | Leu | Gly | Val | Leu | Leu | Leu | Leu | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Val | Cys | Thr | Pro | Leu | Gly | Leu | Ala | Arg | Met | Phe | Ser | Val | Thr | Gly | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Lys | Leu | Leu | Val | Lys | Pro | Arg | Leu | Leu | Glu | Asp | Leu | Glu | Glu | Gln | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Leu | Tyr | Cys | Ser | Ala | Phe | Glu | Glu | Ala | Ala | Leu | Thr | Arg | Arg | Ile | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Cys | Asn | Pro | Thr | Ser | Cys | Trp | Leu | Pro | Leu | Asp | Met | Glu | Leu | Leu | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| His | Arg | Gln | Val | Leu | Ala | Leu | Gln | Thr | Gln | Arg | Val | Leu | Leu | Glu | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Lys | Arg | Arg | Lys | Ala | Ser | Ala | Trp | Gln | Arg | Asn | Leu | Gly | Tyr | Pro | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Leu | Ala | Met | Leu | Cys | Leu | Leu | Val | Leu | Thr | Gly | Leu | Ser | Val | Leu | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Ile | Val | Ala | Ile | His | Ile | Leu | Glu | Leu | Leu | Ile | Asp | Glu | Ala | Ala | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Met | Pro | Arg | Gly | Met | Gln | Gly | Thr | Ser | Leu | Gly | Gln | Val | Ser | Phe | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |
| Ser | Lys | Leu | Gly | Ser | Phe | Gly | Ala | Val | Ile | Gln | Val | Val | Leu | Ile | | | | | |
| | | | | 350 | | | | | 355 | | | | | 360 | | | | | |
| Phe | Tyr | Leu | Met | Val | Ser | Ser | Val | Val | Gly | Phe | Tyr | Ser | Ser | Pro | | | | | |
| | | | | 365 | | | | | 370 | | | | | 375 | | | | | |
| Leu | Phe | Arg | Ser | Leu | Arg | Pro | Arg | Trp | His | Asp | Thr | Ala | Met | Thr | | | | | |
| | | | | 380 | | | | | 385 | | | | | 390 | | | | | |
| Gln | Ile | Ile | Gly | Asn | Cys | Val | Cys | Leu | Leu | Val | Leu | Ser | Ser | Ala | | | | | |
| | | | | 395 | | | | | 400 | | | | | 405 | | | | | |
| Leu | Pro | Val | Phe | Ser | Arg | Thr | Leu | Gly | Leu | Thr | Arg | Phe | Asp | Leu | | | | | |
| | | | | 410 | | | | | 415 | | | | | 420 | | | | | |
| Leu | Gly | Asp | Phe | Gly | Arg | Phe | Asn | Trp | Leu | Gly | Asn | Phe | Tyr | Ile | | | | | |
| | | | | 425 | | | | | 430 | | | | | 435 | | | | | |
| Val | Phe | Leu | Tyr | Asn | Ala | Ala | Phe | Ala | Gly | Leu | Thr | Thr | Leu | Cys | | | | | |

| | | |
|---|-----|-----|
| 440 | 445 | 450 |
| Leu Val Lys Thr Phe Thr Ala Ala Val Arg Ala Glu Leu Ile Arg | | |
| 455 | 460 | 465 |
| Ala Phe Gly Leu Asp Arg Leu Pro Leu Pro Val Ser Gly Phe Pro | | |
| 470 | 475 | 480 |
| Gln Ala Ser Arg Lys Thr Gln His Gln | | |
| 485 | | |

<210> 139
 <211> 294
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 53, 57
 <223> unknown base

<400> 139
 ggctgccgag ggaaggcccc ttgggttggt cttggttgct tggcggcggc 50
 ggnnttcntcc ccgctcgtcc tccccgggcc cagaggcacc tcggcttcag 100
 tcatgctgag cagagtatgg aagcacctga ctacgaagtg ctatccgtgc 150
 gagaacagct attccacgag aggatccgcg agtgtattat atcaacactt 200
 ctgtttgcaa cactgtacat cctctgccac atcttcctga cccgcttcaa 250
 gaagcctgct gaggttcacca cagtggatga tgaagatgcc accg 294

<210> 140
 <211> 526
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 197, 349
 <223> unknown base

<400> 140
 gaccgacctt aaagagtggg agcaaaggga ggacagagcc ttttaaaacg 50
 aggcggtggt gcctgccctt taaggggcggg gcgtccggac gactgtatct 100
 gagccccaga ctgccccgag tttotgtcgc aggctgcgag gaaaggcccc 150
 taggctgggt ctggtgcttg gcggcggcgg cttcctcccc gttgtcntcc 200
 ccgggcccag aggcacctcg gcttcagtca tgctgagcag agtatggaag 250
 cacctgacta cgaagtgcta tccgtgcgag aacagctatt ccacgagagg 300
 atccgcgagt gtattatatc aacacttctg tttgcaacac tgtacatcnt 350
 ctgccacatc ttctgaccc gcttcaagaa gcctgctgag ttcaccacag 400
 tggatgatga agatgccacc gtcaacaaga ttgcgctcga gctgtgcacc 450

tttaccctgg caattgccct ggggtgctgtc ctgctcctgc ccttctccat 500

catcagcaat gaggtgctgc actccc 526

<210> 141

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 141

gactgtatct gagccccaga ctgc 24

<210> 142

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 142

tcagcaatga ggtgctgtc 20

<210> 143

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 143

tgaggaagat gagggacagg ttgg 24

<210> 144

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 144

tatggaagca cctgactacg aagtgtatc cgtgcgagaa cagctattcc 50

<210> 145

<211> 685

<212> DNA

<213> Homo sapiens

<400> 145

gatgtgctcc ttggagctgg tgtgcagtgt cctgactgta agatcaagtc 50

caaacctgtt ttggaattga ggaaacttct cttttgatct cagcccttgg 100

tggtccaggt cttcatgtg ctgtgggtga tattactggc cctggctcct 150

gtcagtggac agtttgcaag gacaccagg cccattattt tcctccagcc 200

tccatggacc acagtcttcc aaggagagag agtgaccctc acttgcaagg 250

gatttgcgtt ctactcacca cagaaaacaa aatggtacca tcggtacctt 300
 gggaaagaaa tactaagaga aacccagac aatattcttg aggttcagga 350
 atctggagag tacagatgcc agggccaggg ctcccctctc agtagccctg 400
 tgcacttgga tttttcttca gagatgggat ttcctcatgc tgcccaggct 450
 aatgttgaac tcctgggctc aagtgatctg ctcacctagg cctctcaaag 500
 cgctgggatt acagcttcgc tgatcctgca agctccactt tctgtgtttg 550
 aaggagactc tgtggttctg aggtgccggg caaaggcgga agtaacactg 600
 aataatacta tttaacaaga tgataatgct ctggcattcc ttaataaaaag 650
 aactgacttc caaaaaaaaa aaaaaaaaaa aaaaa 685

<210> 146
 <211> 124
 <212> PRT
 <213> Homo sapiens

<400> 146
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 1 5 10 15
 Gln Phe Ala Arg Thr Pro Arg Pro Ile Ile Phe Leu Gln Pro Pro
 20 25 30
 Trp Thr Thr Val Phe Gln Gly Glu Arg Val Thr Leu Thr Cys Lys
 35 40 45
 Gly Phe Arg Phe Tyr Ser Pro Gln Lys Thr Lys Trp Tyr His Arg
 50 55 60
 Tyr Leu Gly Lys Glu Ile Leu Arg Glu Thr Pro Asp Asn Ile Leu
 65 70 75
 Glu Val Gln Glu Ser Gly Glu Tyr Arg Cys Gln Ala Gln Gly Ser
 80 85 90
 Pro Leu Ser Ser Pro Val His Leu Asp Phe Ser Ser Glu Met Gly
 95 100 105
 Phe Pro His Ala Ala Gln Ala Asn Val Glu Leu Leu Gly Ser Ser
 110 115 120
 Asp Leu Leu Thr

<210> 147
 <211> 1621
 <212> DNA
 <213> Homo sapiens

<400> 147
 cagaagaggg ggctagctag ctgtctctgc ggaccaggga gacccccgcg 50
 ccccccggt gtgaggcggc ctcacagggc cgggtgggct ggcgagccga 100
 cgcggcgggc gaggaggctg tgaggagtgt gtggaacagg acccgggaca 150

gaggaacocat ggctccgcag aacctgagca ccttttgccct gttgctgcta 200
 tacctcatcg gggcggtgat tgccggacga gatttctata agatcttggg 250
 ggtgcctcga agtgcctcta taaaggatat taaaaaggcc tataggaaac 300
 tagccctgca gcttcatccc gaccggaacc ctgatgatcc acaagcccag 350
 gagaaattcc aggatctggg tgctgcttat gaggttctgt cagatagtga 400
 gaaacggaaa cagtacgata cttatggtga agaaggatta aaagatggtc 450
 atcagagctc ccatggagac attttttcac acttctttgg ggattttggg 500
 ttcatgtttg gaggaacccc tcgtcagcaa gacagaaata ttccaagagg 550
 aagtgatatt attgtagatc tagaagtcac tttggaagaa gtatatgcag 600
 gaaattttgt ggaagtagtt agaaacaaac ctgtggcaag gcaggctcct 650
 ggcaaacgga agtgcaattg tcggcaagag atgcggacca cccagctggg 700
 ccctgggccc ttccaaatga cccaggaggt ggtctgcgac gaatgcccta 750
 atgtcaaact agtgaatgaa gaacgaacgc tggaagtaga aatagagcct 800
 ggggtgagag acggcatgga gtaccccttt attggagaag gtgagcctca 850
 cgtggatggg gagcctggag atttacggtt ccgaatcaaa gttgtcaagc 900
 acccaatatt tgaaaggaga ggagatgatt tgtacacaaa tgtgacaatc 950
 tcattagtgt agtcactggg tggctttgag atggatatta ctcacttgga 1000
 tggtcacaag gtacatattt cccgggataa gatcaccagg ccaggagcga 1050
 agctatggaa gaaaggggaa gggctcccca actttgacaa caacaatatc 1100
 aagggctcct tgataatcac ttttgatgtg gattttccaa aagaacagtt 1150
 aacagaggaa gcgagagaag gtatcaaaca gctactgaaa caagggtcag 1200
 tgcagaaggt atacaatgga ctgcaaggat attgagagtg aataaaattg 1250
 gactttgttt aaaataagtg aataagcgat atttattatc tgcaagggtt 1300
 ttttggtgtg gtttttgttt ttattttcaa tatgcaagtt aggcttaatt 1350
 tttttatcta atgatcatca tgaaatgaat aagagggcctt aagaatttgt 1400
 ccatttgcat tcggaaaaga atgaccagca aaaggtttac taatacctct 1450
 ccctttgggg atttaatgtc tgggtgctgcc gcctgagttt caagaattaa 1500
 agctgcaaga ggactccagg agcaaaagaa acacaatata gagggttgga 1550
 gttgttagca atttcattca aaatgccaac tggagaagtc tgtttttaaa 1600
 tacattttgt tgttattttt a 1621

<210> 148
 <211> 358
 <212> PRT

<213> Homo sapiens

<400> 148

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Pro | Gln | Asn | Leu | Ser | Thr | Phe | Cys | Leu | Leu | Leu | Leu | Tyr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Ile | Gly | Ala | Val | Ile | Ala | Gly | Arg | Asp | Phe | Tyr | Lys | Ile | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Gly | Val | Pro | Arg | Ser | Ala | Ser | Ile | Lys | Asp | Ile | Lys | Lys | Ala | Tyr |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Arg | Lys | Leu | Ala | Leu | Gln | Leu | His | Pro | Asp | Arg | Asn | Pro | Asp | Asp |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Pro | Gln | Ala | Gln | Glu | Lys | Phe | Gln | Asp | Leu | Gly | Ala | Ala | Tyr | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Val | Leu | Ser | Asp | Ser | Glu | Lys | Arg | Lys | Gln | Tyr | Asp | Thr | Tyr | Gly |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Glu | Glu | Gly | Leu | Lys | Asp | Gly | His | Gln | Ser | Ser | His | Gly | Asp | Ile |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Phe | Ser | His | Phe | Phe | Gly | Asp | Phe | Gly | Phe | Met | Phe | Gly | Gly | Thr |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Pro | Arg | Gln | Gln | Asp | Arg | Asn | Ile | Pro | Arg | Gly | Ser | Asp | Ile | Ile |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Val | Asp | Leu | Glu | Val | Thr | Leu | Glu | Glu | Val | Tyr | Ala | Gly | Asn | Phe |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Val | Glu | Val | Val | Arg | Asn | Lys | Pro | Val | Ala | Arg | Gln | Ala | Pro | Gly |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Lys | Arg | Lys | Cys | Asn | Cys | Arg | Gln | Glu | Met | Arg | Thr | Thr | Gln | Leu |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Gly | Pro | Gly | Arg | Phe | Gln | Met | Thr | Gln | Glu | Val | Val | Cys | Asp | Glu |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Cys | Pro | Asn | Val | Lys | Leu | Val | Asn | Glu | Glu | Arg | Thr | Leu | Glu | Val |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Glu | Ile | Glu | Pro | Gly | Val | Arg | Asp | Gly | Met | Glu | Tyr | Pro | Phe | Ile |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Gly | Glu | Gly | Glu | Pro | His | Val | Asp | Gly | Glu | Pro | Gly | Asp | Leu | Arg |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Phe | Arg | Ile | Lys | Val | Val | Lys | His | Pro | Ile | Phe | Glu | Arg | Arg | Gly |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Asp | Asp | Leu | Tyr | Thr | Asn | Val | Thr | Ile | Ser | Leu | Val | Glu | Ser | Leu |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Val | Gly | Phe | Glu | Met | Asp | Ile | Thr | His | Leu | Asp | Gly | His | Lys | Val |
| | | | | 275 | | | | | 280 | | | | | 285 |
| His | Ile | Ser | Arg | Asp | Lys | Ile | Thr | Arg | Pro | Gly | Ala | Lys | Leu | Trp |
| | | | | 290 | | | | | 295 | | | | | 300 |

Lys Lys Gly Glu Gly Leu Pro Asn Phe Asp Asn Asn Asn Ile Lys
305 310 315

Gly Ser Leu Ile Ile Thr Phe Asp Val Asp Phe Pro Lys Glu Gln
320 325 330

Leu Thr Glu Glu Ala Arg Glu Gly Ile Lys Gln Leu Leu Lys Gln
335 340 345

Gly Ser Val Gln Lys Val Tyr Asn Gly Leu Gln Gly Tyr
350 355

<210> 149

<211> 509

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 34, 52, 134, 142, 155, 158, 196, 217, 228, 272, 347, 410, 445,
482

<223> unknown base

<400> 149

tgggaccagg gaaccccggtg gagngcctaa caggccggtg 50

gntgcgaccg aagcggcggtg cggaggaggt ttgaggatt ttggaacag 100

gacccggaca gaggaaccat ggttcgcag aacntgagca cnttttgcct 150

gttgntgnta tacttcatcg gggcggtgat tgccggacga gatttntata 200

agattttggg gtgcctngaa gtgcctnta taaaggatat taaaaaggcc 250

tataggaaac tagccctgca gntttatccc gaccggaacc ctgatgatcc 300

acaagcccag gagaaattcc aggatttggg tgctgcttat gaggttntgt 350

cagatagtga gaaacggaaa cagtacgata attatggtga agaaggatta 400

aaagatggtt atcagagctc ccatggagac attttttcac acttntttgg 450

ggattttggt ttcattgttg gaggaacccc tngtcagcaa gacagaaata 500

ttccaagag 509

<210> 150

<211> 1532

<212> DNA

<213> Homo sapiens

<400> 150

ggcacgaggc ggcggggcag tcgcgggatg cgcccgggag ccacagcctg 50

aggccctcag gtctctgcag gtgtcgtgga ggaacctagc acctgccatc 100

ctcttcccca atttgccact tccagcagct ttagcccatg aggaggatgt 150

gaccgggact gagtcaggag ccctctggaa gcatggagac tgtggtgatt 200

gttgccatag gtgtgctggc caccatcttt ctggcttcgt ttgcagcctt 250

ggtgctggtt tgcaggcagc gctactgccg gccgcgagac ctgctgcagc 300

attttagtgc cttattgggtt ggcctttgat aggcattgatc ttcgaaattt 350
atggattttt tctcttggtc aggggcttct ttctgtcgt tgttggcttt 400
attagaagag tgccagtcct tggatccctc ctaaattttac ctggaattag 450
atcatttgta gataaagttg gagaaagcaa caatatggta taacaacaag 500
tgaatttgaa gactcattta aaatattgtg ttatttataa agtcatttga 550
agaatattca gcacaaaatt aaattacatg aaatagcttg taatgttctt 600
tacaggagtt taaaacgtat agcctacaaa gtaccagcag caaattagca 650
aagaagcagt gaaaacaggc ttctactcaa gtgaactaag aagaagtcag 700
caagcaaact gagagaggtg aaatccatgt taatgatgct taagaaactc 750
ttgaaggcta tttgtgttgt ttttccacaa tgtgcgaaac tcagccatcc 800
ttagagaact gtggtgcctg tttcttttct ttttattttg aaggctcagg 850
agcatccata ggcatttgct ttttagaagt gtccactgca atggcaaaaa 900
tatttccagt tgcactgtat ctctggaagt gatgcatgaa ttcgattgga 950
ttgtgtcatt ttaaagtatt aaaaccaagg aaacccaat tttgatgtat 1000
ggattacttt tttttgngcn cagggcc 1027

<210> 153
<211> 138
<212> PRT
<213> Homo sapiens

<220>
<221> N-myristoylation Sites
<222> 11-16, 51-56 and 116-121
<223> N-myristoylation Sites.

<220>
<221> Transmembrane domains
<222> 12-30, 33-52, 69-89 and 93-109
<223> Transmembrane domains

<220>
<221> Aminoacyl-transfer RNA Synthetases.
<222> 49-59
<223> Aminoacyl-transfer RNA synthetases class-II protein.

<400> 153
Met Ile Ser Leu Thr Asp Thr Gln Lys Ile Gly Met Gly Leu Thr
1 5 10 15
Gly Phe Gly Val Phe Phe Leu Phe Phe Gly Met Ile Leu Phe Phe
20 25 30
Asp Lys Ala Leu Leu Ala Ile Gly Asn Val Leu Phe Val Ala Gly
35 40 45
Leu Ala Phe Val Ile Gly Leu Glu Arg Thr Phe Arg Phe Phe Phe
50 55 60

caacaccatt cagctcttca ctctcctcct ctggcccatt aacaagcagc 300
 tcttccggaa gatcaactgc agactgtcct attgcatctc aagccagctg 350
 gtgatgctgc tggagtgggtg gtcgggcacg gaatgcacca tcttcacgga 400
 cccgcgcgcc tacctcaagt atgggaagga aaatgccatc gtggttctca 450
 accacaagtt tgaaattgac tttctgtgtg gctggagcct gtccgaacgc 500
 tttgggctgt tagggggctc caaggtcctg gccaaagaaag agctggccta 550
 tgtcccaatt atcggctgga tgtggtactt caccgagatg gtcttctgtt 600
 cgcgcaagtg ggagcaggat cgcaagacgg ttgccaccag tttgcagcac 650
 ctccgggact accccgagaa gtattttttc ctgattcact gtgagggcac 700
 acggttcacg gagaagaagc atgagatcag catgcagggtg gcccgggcca 750
 aggggctgcc tcgcctcaag catcacctgt tgccacgaac caagggttc 800
 gccatcacgg tgaggagctt gagaaatgta gtttcagctg tatatgactg 850
 tacactcaat ttcagaaata atgaaaatcc aacactgctg ggagtcctaa 900
 acggaagaa ataccatgca gatttgtatg ttaggaggat cccactggaa 950
 gacatccctg aagacgatga cgagtgtctg gcctggctgc acaagctcta 1000
 ccaggagaag gatgcctttc aggaggagta ctacaggacg ggcaccttcc 1050
 cagagacgcc catggtgccc ccccgcgggc cctggaccct cgtgaactgg 1100
 ctgttttggg cctcgtggt gctctaccct ttcttccagt tcttggtcag 1150
 catgatcagg agcgggtctt ccctgacgct ggccagcttc atcctcgtct 1200
 tctttgtggc ctccgtggga gttcgtatga tgattggtgt gacggaaatt 1250
 gacaagggct ctgcctacgg caactctgac agcaagcaga aactgaatga 1300
 ctgactcagg gaggtgtcac catccgaagg gaaccttggg gaactggtgg 1350
 cctctgcata tcctccttag tgggacacgg tgacaaaggc tgggtgagcc 1400
 cctgctgggc acggcggaag tcacgacctc tccagccagg gagtctggtc 1450
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 gctttagtgg gctttggttt tctttttgtg cgagtgtgtg tgagaatggc 1550
 tgtgtggtga gtgtgaactt tgttctgtga tcatagaaag ggtatttttag 1600
 gctgcagggg agggcagggc tggggaccga aggggacaag ttcccctttc 1650
 atcctttggt gctgagtttt ctgtaaccct tggttgccag agataaagtg 1700
 aaaagtgcct taggtgagat gactaaatta tgctccaag aaaaaaaaaat 1750
 taaagtgcct ttctgggtca aaaaaaaaaa a 1781

<210> 156

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 290 | | 295 | | 300 |
| Pro Pro Arg Arg | Pro Trp Thr Leu Val | Asn Trp Leu Phe Trp | Ala | | |
| | 305 | 310 | 315 | | |
| Ser Leu Val Leu | Tyr Pro Phe Phe Gln | Phe Leu Val Ser Met | Ile | | |
| | 320 | 325 | 330 | | |
| Arg Ser Gly Ser | Ser Leu Thr Leu Ala | Ser Phe Ile Leu Val | Phe | | |
| | 335 | 340 | 345 | | |
| Phe Val Ala Ser | Val Gly Val Arg Trp | Met Ile Gly Val Thr | Glu | | |
| | 350 | 355 | 360 | | |
| Ile Asp Lys Gly | Ser Ala Tyr Gly Asn | Ser Asp Ser Lys Gln | Lys | | |
| | 365 | 370 | 375 | | |

Leu Asn Asp

<210> 157
 <211> 1849
 <212> DNA
 <213> Homo sapiens

<400> 157
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 gctttgtgct cggcgcactc gctttccagc acctcaacac ggactcggac 100
 acggaagggtt ttcttcttgg ggaagtaaaa ggtgaagcca agaacagcat 150
 tactgattcc caaatggatg atgttgaagt tgtttataca attgacattc 200
 agaaatatat tccatgctat cagcttttta gcttttataa ttcttcaggc 250
 gaagtaaatg agcaagcact gaagaaaata ttatcaaagc tcaaaaagaa 300
 tgtggtaggc tgggtacaaat tccgtcgtca ttcagatcag atcatgacgt 350
 tttagagagag gctgcttcac aaaaacttgc aggagcattt ttcaaaccac 400
 gaccttggtt ttctgctatt aacaccaagt ataataacag aaagctgctc 450
 tactcatoga ctggaacatt ccttatataa acctcaaaaa ggactttttc 500
 acagggtacc ttttagtggt gccaatctgg gcatgtctga acaactgggt 550
 tataaaaactg tatcagggtc ctgtatgtcc actggtttta gccgagcagt 600
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 atatgcaaaa aagtggaaga cagtgaacaa gcagtagata aactagtaaa 750
 ggatgtaaac agattaaaac gagaaattga gaaaaggaga ggagcacaga 800
 ttcaggcagc aagagagaag aacatccaaa aagaccctca ggagaacatt 850
 tttctttgtc aggcattacg gacctttttt ccaaattctg aatttcttca 900
 ttcattgtgt atgtctttta aaaatagaca tgtttctaaa agtagctgta 950

actacaacca ccattctgat gtagtagaca atctgacctt aatggtagaa 1000
 cacactgaca ttcctgaagc tagtccagct agtacaccac aaatcattaa 1050
 gcataaagcc ttagacttag atgacagatg gcaattcaag agatctcggt 1100
 tgtagatac acaagacaaa cgatctaaag caaatactgg tagtagtaac 1150
 caagataaag catccaaaat gagcagccca gaaacagatg aagaaattga 1200
 aaagatgaag ggttttggtg aatattcacg gtctcctaca ttttgatcct 1250
 ttttaacctta caaggagatt tttttatttg gctgatgggt aaagccaaac 1300
 atttctattg tttttactat gttgagctac ttgcagtaag ttcatttggt 1350
 tttactatgt tcacctgttt gcagtaatac acagataact cttagtgcac 1400
 ttacttcaca aagtactttt tcaaacatca gatgctttta tttccaaacc 1450
 tttttttcac ctttctactaa gttgttgagg ggaaggctta cacagacaca 1500
 ttcttttagaa ttggaaaagt gagaccaggc acagtggctc acacctgtaa 1550
 tcccagcact tagggaagac aagtcaggag gattgattga agctaggagt 1600
 tagagaccag cctgggcaac gtattgagac catgtctatt aaaaaataaa 1650
 atggaaaagc aagaatagcc ttattttcaa aatatggaaa gaaatttata 1700
 tgaaaattta tctgagtcac taaaattctc ctttaagtga acttttttag 1750
 aagtacatta tggctagagt tgccagataa aatgctggat atcatgcaat 1800
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<210> 158
 <211> 409
 <212> PRT
 <213> Homo sapiens

<400> 158
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 Gly Phe Leu Leu Gly Glu Val Lys Gly Glu Ala Lys Asn Ser Ile
 35 40 45
 Thr Asp Ser Gln Met Asp Asp Val Glu Val Val Tyr Thr Ile Asp
 50 55 60
 Ile Gln Lys Tyr Ile Pro Cys Tyr Gln Leu Phe Ser Phe Tyr Asn
 65 70 75
 Ser Ser Gly Glu Val Asn Glu Gln Ala Leu Lys Lys Ile Leu Ser
 80 85 90
 Asn Val Lys Lys Asn Val Val Gly Trp Tyr Lys Phe Arg Arg His
 95 100 105

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ser | Asp | Gln | Ile | Met | Thr | Phe | Arg | Glu | Arg | Leu | Leu | His | Lys | Asn | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Leu | Gln | Glu | His | Phe | Ser | Asn | Gln | Asp | Leu | Val | Phe | Leu | Leu | Leu | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Thr | Pro | Ser | Ile | Ile | Thr | Glu | Ser | Cys | Ser | Thr | His | Arg | Leu | Glu | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| His | Ser | Leu | Tyr | Lys | Pro | Gln | Lys | Gly | Leu | Phe | His | Arg | Val | Pro | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Val | Val | Ala | Asn | Leu | Gly | Met | Ser | Glu | Gln | Leu | Gly | Tyr | Lys | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Thr | Val | Ser | Gly | Ser | Cys | Met | Ser | Thr | Gly | Phe | Ser | Arg | Ala | Val | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Gln | Thr | His | Ser | Ser | Lys | Phe | Phe | Glu | Glu | Asp | Gly | Ser | Leu | Lys | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Glu | Val | His | Lys | Ile | Asn | Glu | Met | Tyr | Ala | Ser | Leu | Gln | Glu | Glu | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Leu | Lys | Ser | Ile | Cys | Lys | Lys | Val | Glu | Asp | Ser | Glu | Gln | Ala | Val | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Asp | Lys | Leu | Val | Lys | Asp | Val | Asn | Arg | Leu | Lys | Arg | Glu | Ile | Glu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Lys | Arg | Arg | Gly | Ala | Gln | Ile | Gln | Ala | Ala | Arg | Glu | Lys | Asn | Ile | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Gln | Lys | Asp | Pro | Gln | Glu | Asn | Ile | Phe | Leu | Cys | Gln | Ala | Leu | Arg | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Thr | Phe | Phe | Pro | Asn | Ser | Glu | Phe | Leu | His | Ser | Cys | Val | Met | Ser | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Leu | Lys | Asn | Arg | His | Val | Ser | Lys | Ser | Ser | Cys | Asn | Tyr | Asn | His | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| His | Leu | Asp | Val | Val | Asp | Asn | Leu | Thr | Leu | Met | Val | Glu | His | Thr | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Asp | Ile | Pro | Glu | Ala | Ser | Pro | Ala | Ser | Thr | Pro | Gln | Ile | Ile | Lys | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| His | Lys | Ala | Leu | Asp | Leu | Asp | Asp | Arg | Trp | Gln | Phe | Lys | Arg | Ser | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Arg | Leu | Leu | Asp | Thr | Gln | Asp | Lys | Arg | Ser | Lys | Ala | Asn | Thr | Gly | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Ser | Ser | Asn | Gln | Asp | Lys | Ala | Ser | Lys | Met | Ser | Ser | Pro | Glu | Thr | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Asp | Glu | Glu | Ile | Glu | Lys | Met | Lys | Gly | Phe | Gly | Glu | Tyr | Ser | Arg | |
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Ser Pro Thr Phe

<210> 159
<211> 2651
<212> DNA
<213> Homo sapiens

<400> 159

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cgccgcccac accctctgcg gtccccgcgg cgcttgccac ccttccctcc 150
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 ggttgacacc agcaaaccag acatactgat cttcgtcaa atcatggctc 1900
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 aacagtgtag gtacagaact atagttagtt gtgcatttgt gattttatca 2450
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c 2651

<210> 160

<211> 556

<212> PRT

<213> Homo sapiens

<400> 160

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Arg | Phe | Gly | Leu | Pro | Ala | Leu | Leu | Cys | Thr | Leu | Ala | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ser | Ala | Ala | Leu | Leu | Ala | Ala | Glu | Leu | Lys | Ser | Lys | Ser | Cys |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Glu | Val | Arg | Arg | Leu | Tyr | Val | Ser | Lys | Gly | Phe | Asn | Lys | Asn |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| | 35 | 40 | 45 |
|---|-----|-----|-----|
| Asp Ala Pro Leu His Glu Ile Asn Gly Asp His Leu Lys Ile Cys | 50 | 55 | 60 |
| Pro Gln Gly Ser Thr Cys Cys Ser Gln Glu Met Glu Glu Lys Tyr | 65 | 70 | 75 |
| Ser Leu Gln Ser Lys Asp Asp Phe Lys Ser Val Val Ser Glu Gln | 80 | 85 | 90 |
| Cys Asn His Leu Gln Ala Val Phe Ala Ser Arg Tyr Lys Lys Phe | 95 | 100 | 105 |
| Asp Glu Phe Phe Lys Glu Leu Leu Glu Asn Ala Glu Lys Ser Leu | 110 | 115 | 120 |
| Asn Asp Met Phe Val Lys Thr Tyr Gly His Leu Tyr Met Gln Asn | 125 | 130 | 135 |
| Ser Glu Leu Phe Lys Asp Leu Phe Val Glu Leu Lys Arg Tyr Tyr | 140 | 145 | 150 |
| Val Val Gly Asn Val Asn Leu Glu Glu Met Leu Asn Asp Phe Trp | 155 | 160 | 165 |
| Ala Arg Leu Leu Glu Arg Met Phe Arg Leu Val Asn Ser Gln Tyr | 170 | 175 | 180 |
| His Phe Thr Asp Glu Tyr Leu Glu Cys Val Ser Lys Tyr Thr Glu | 185 | 190 | 195 |
| Gln Leu Lys Pro Phe Gly Asp Val Pro Arg Lys Leu Lys Leu Gln | 200 | 205 | 210 |
| Val Thr Arg Ala Phe Val Ala Ala Arg Thr Phe Ala Gln Gly Leu | 215 | 220 | 225 |
| Ala Val Ala Gly Asp Val Val Ser Lys Val Ser Val Val Asn Pro | 230 | 235 | 240 |
| Thr Ala Gln Cys Thr His Ala Leu Leu Lys Met Ile Tyr Cys Ser | 245 | 250 | 255 |
| His Cys Arg Gly Leu Val Thr Val Lys Pro Cys Tyr Asn Tyr Cys | 260 | 265 | 270 |
| Ser Asn Ile Met Arg Gly Cys Leu Ala Asn Gln Gly Asp Leu Asp | 275 | 280 | 285 |
| Phe Glu Trp Asn Asn Phe Ile Asp Ala Met Leu Met Val Ala Glu | 290 | 295 | 300 |
| Arg Leu Glu Gly Pro Phe Asn Ile Glu Ser Val Met Asp Pro Ile | 305 | 310 | 315 |
| Asp Val Lys Ile Ser Asp Ala Ile Met Asn Met Gln Asp Asn Ser | 320 | 325 | 330 |
| Val Gln Val Ser Gln Lys Val Phe Gln Gly Cys Gly Pro Pro Lys | 335 | 340 | 345 |
| Pro Leu Pro Ala Gly Arg Ile Ser Arg Ser Ile Ser Glu Ser Ala | | | |

<400> 162
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<210> 163
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 163
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<210> 164
<211> 870
<212> DNA
<213> Homo sapiens

<400> 164
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cgatgaaagt tctaattctt tccctcctcc tgttgctgcc actaatgctg 200
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gtgagtgcaa agattgggtc ctgagagccc cgagaagaaa attcatgaca 350
gtgtctgggc tgccaaagaa gcagtgcccc tgtgatcatt tcaagggcaa 400
tgtgaagaaa acaagacacc aaaggcacca cagaaagcca aacaagcatt 450
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ctgcctttgt aggagctctg agcgcccaact cttccaatta aacattctca 550
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cgtcagtctt agcctgtgcc ctccccttac ccaggcttag gcttaattac 750
ctgaaagatt ccaggaaact gtagcttcct agctagtgtc atttaacctt 800
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tcaaaaaaaaa aaaaaaaaaa 870

<210> 165
<211> 119
<212> PRT
<213> Homo sapiens

<400> 165
Met Lys Val Leu Ile Ser Ser Leu Leu Leu Leu Pro Leu Met

| | | | |
|---|-----|-----|-----|
| 1 | 5 | 10 | 15 |
| Leu Met Ser Met Val Ser Ser Ser Leu Asn Pro Gly Val Ala Arg | 20 | 25 | 30 |
| Gly His Arg Asp Arg Gly Gln Ala Ser Arg Arg Trp Leu Gln Glu | 35 | 40 | 45 |
| Gly Gly Gln Glu Cys Glu Cys Lys Asp Trp Phe Leu Arg Ala Pro | 50 | 55 | 60 |
| Arg Arg Lys Phe Met Thr Val Ser Gly Leu Pro Lys Lys Gln Cys | 65 | 70 | 75 |
| Pro Cys Asp His Phe Lys Gly Asn Val Lys Lys Thr Arg His Gln | 80 | 85 | 90 |
| Arg His His Arg Lys Pro Asn Lys His Ser Arg Ala Cys Gln Gln | 95 | 100 | 105 |
| Phe Leu Lys Gln Cys Gln Leu Arg Ser Phe Ala Leu Pro Leu | 110 | 115 | |

<210> 166
 <211> 551
 <212> DNA
 <213> Homo sapiens

<400> 166
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 ccagacgact cgggcaaaga cccaaagcca gacttcccca aattcctaag 150
 cctcctgggc acagagatca ttgagaatgc agtcgagttc atcctccgct 200
 ccatgtccag gagcacagga tttatggaat ttgatgataa tgaaggaaaa 250
 cattcatcaa agtgacatcc tcaggacaca cccatgtggc tcctggacaa 300
 tccaagagca gccaaatcct gcttttccag tttggctcca caagtcctcc 350
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 tggcttcaac caaacagaac tcattttgaa caccctgact gcatttttgc 450
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<210> 167
 <211> 87
 <212> PRT
 <213> Homo sapiens

<400> 167
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 1 5 10 15
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| | | | | | |
|---|----|--|----|--|----|
| | 20 | | 25 | | 30 |
| Asp Asp Lys Pro Asp Asp Ser Gly Lys Asp Pro Lys Pro Asp Phe | | | | | |
| | 35 | | 40 | | 45 |
| Pro Lys Phe Leu Ser Leu Leu Gly Thr Glu Ile Ile Glu Asn Ala | | | | | |
| | 50 | | 55 | | 60 |
| Val Glu Phe Ile Leu Arg Ser Met Ser Arg Ser Thr Gly Phe Met | | | | | |
| | 65 | | 70 | | 75 |
| Glu Phe Asp Asp Asn Glu Gly Lys His Ser Ser Lys | | | | | |
| | 80 | | 85 | | |

<210> 168
 <211> 1371
 <212> DNA
 <213> Homo sapiens

<400> 168
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 gcagctgctg gtgctgcttc ttaccctgcc cctgcacctc atggctctgc 150
 tgggctgctg gcagcccctg tgcaaaagct acttccccta cctgatggcc 200
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 ccaccttctt cctgagctgg gggcaccagg gagaatcaga gatgctgggg 1300
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 taataaatag acgaaaccac g 1371

<210> 169
 <211> 277
 <212> PRT
 <213> Homo sapiens

<400> 169

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Asp | Ile | Leu | Val | Pro | Leu | Leu | Gln | Leu | Leu | Val | Leu | Leu | Leu | 1 | 5 | 10 | 15 |
| Thr | Leu | Pro | Leu | His | Leu | Met | Ala | Leu | Leu | Gly | Cys | Trp | Gln | Pro | 20 | 25 | 30 | |
| Leu | Cys | Lys | Ser | Tyr | Phe | Pro | Tyr | Leu | Met | Ala | Val | Leu | Thr | Pro | 35 | 40 | 45 | |
| Lys | Ser | Asn | Arg | Lys | Met | Glu | Ser | Lys | Lys | Arg | Glu | Leu | Phe | Ser | 50 | 55 | 60 | |
| Gln | Ile | Lys | Gly | Leu | Thr | Gly | Ala | Ser | Gly | Lys | Val | Ala | Leu | Leu | 65 | 70 | 75 | |
| Glu | Leu | Gly | Cys | Gly | Thr | Gly | Ala | Asn | Phe | Gln | Phe | Tyr | Pro | Pro | 80 | 85 | 90 | |
| Gly | Cys | Arg | Val | Thr | Cys | Leu | Asp | Pro | Asn | Pro | His | Phe | Glu | Lys | 95 | 100 | 105 | |
| Phe | Leu | Thr | Lys | Ser | Met | Ala | Glu | Asn | Arg | His | Leu | Gln | Tyr | Glu | 110 | 115 | 120 | |
| Arg | Phe | Val | Val | Ala | Pro | Gly | Glu | Asp | Met | Arg | Gln | Leu | Ala | Asp | 125 | 130 | 135 | |
| Gly | Ser | Met | Asp | Val | Val | Val | Cys | Thr | Leu | Val | Leu | Cys | Ser | Val | 140 | 145 | 150 | |
| Gln | Ser | Pro | Arg | Lys | Val | Leu | Gln | Glu | Val | Arg | Arg | Val | Leu | Arg | 155 | 160 | 165 | |
| Pro | Gly | Gly | Val | Leu | Phe | Phe | Trp | Glu | His | Val | Ala | Glu | Pro | Tyr | 170 | 175 | 180 | |
| Gly | Ser | Trp | Ala | Phe | Met | Trp | Gln | Gln | Val | Phe | Glu | Pro | Thr | Trp | 185 | 190 | 195 | |
| Lys | His | Ile | Gly | Asp | Gly | Cys | Cys | Leu | Thr | Arg | Glu | Thr | Trp | Lys | 200 | 205 | 210 | |
| Asp | Leu | Glu | Asn | Ala | Gln | Phe | Ser | Glu | Ile | Gln | Met | Glu | Arg | Gln | 215 | 220 | 225 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Pro | Pro | Leu | Lys | Trp | Leu | Pro | Val | Gly | Pro | His | Ile | Met | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Lys | Ala | Val | Lys | Gln | Ser | Phe | Pro | Ser | Ser | Lys | Ala | Leu | Ile | Cys |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Ser | Phe | Pro | Ser | Leu | Gln | Leu | Glu | Gln | Ala | Thr | His | Gln | Pro | Ile |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Tyr | Leu | Pro | Leu | Arg | Gly | Thr | | | | | | | | |
| | | | | 275 | | | | | | | | | | |

<210> 170
 <211> 1621
 <212> DNA
 <213> Homo sapiens

<400> 170
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 agcttctgta gataaggggtt aaaaactaat atttatatga cagaagaaaa 150
 agatgtcatt ccgtaaagta aacatcatca tcttggctcct ggctgttgct 200
 ctcttcttac tggttttgca ccataacttc ctcagcttga gcagtttggt 250
 aaggaatgag gttacagatt caggaattgt agggcctcaa cctatagact 300
 ttgtcccaaa tgctctccga catgcagtag atgggagaca agaggagatt 350
 cctgtggtca tcgctgcac tgaagacagg cttggggggg ccattgcagc 400
 tataaacagc attcagcaca acactcgctc caatgtgatt ttctacattg 450
 ttactctcaa caatacagca gaccatctcc ggtcctggct caacagtgat 500
 tcctgaaaa gcatcagata caaaattgtc aattttgacc ctaaaactttt 550
 ggaaggaaaa gttaaaggagg atcctgacca gggggaatcc atgaaacott 600
 taacctttgc aaggttctac ttgccaatc tggttcccag cgcaaagaag 650
 gccatataca tggatgatga tgtaattgtg caaggtgata ttcttgccct 700
 ttacaataca gcactgaagc caggacatgc agctgcattt tcagaagatt 750
 gtgattcagc ctctactaaa gttgtcatcc gtggagcagg aaaccagtac 800
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<212> PRT
<213> Homo sapiens

<400> 171
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Ser Leu Leu Arg Asn Glu Val Thr Asp Ser Gly Ile Val Gly Pro
35 40 45
Gln Pro Ile Asp Phe Val Pro Asn Ala Leu Arg His Ala Val Asp
50 55 60
Gly Arg Gln Glu Glu Ile Pro Val Val Ile Ala Ala Ser Glu Asp
65 70 75
Arg Leu Gly Gly Ala Ile Ala Ala Ile Asn Ser Ile Gln His Asn
80 85 90
Thr Arg Ser Asn Val Ile Phe Tyr Ile Val Thr Leu Asn Asn Thr
95 100 105
Ala Asp His Leu Arg Ser Trp Leu Asn Ser Asp Ser Leu Lys Ser
110 115 120
Ile Arg Tyr Lys Ile Val Asn Phe Asp Pro Lys Leu Leu Glu Gly
125 130 135
Lys Val Lys Glu Asp Pro Asp Gln Gly Glu Ser Met Lys Pro Leu
140 145 150
Thr Phe Ala Arg Phe Tyr Leu Pro Ile Leu Val Pro Ser Ala Lys
155 160 165
Lys Ala Ile Tyr Met Asp Asp Asp Val Ile Val Gln Gly Asp Ile
170 175 180
Leu Ala Leu Tyr Asn Thr Ala Leu Lys Pro Gly His Ala Ala Ala

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<211> 1866
<212> DNA
<213> Homo sapiens

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 aaaaaaaaaa aaaaaa 1866

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<210> 175

<211> 87

<212> PRT

<213> Homo sapiens

<400> 175

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Asn Gly Leu Val Gly Phe Leu Leu Leu Leu Leu Trp Val Ile Leu
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Cys Trp Ala Cys His Ser Arg Leu Pro Thr Leu Thr Leu Ser Leu
35 40 45

Asn Pro Val Pro Thr Pro Ala Leu Ala Pro Val Leu Arg Arg Pro
50 55 60

His His Pro Arg Ser Pro Ala Met Lys Ala Ala Thr Cys Cys Ser
65 70 75

Pro Glu Gly Pro Trp Pro Ser Leu Glu Pro Arg Thr
80 85

<210> 176

<211> 1660

<212> DNA

<213> Homo sapiens

<400> 176

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atgatgttga caccctccac cgaattctaa gtggaatcat gtcgggaaga 200

gatacaatcc ttggcctgtg taccctcgca ttagccttgt ctttggccat 250

gatgtttacc ttcagattca tcaccacct tctggttcac attttcattt 300

cattggttat tttgggattg ttgtttgtct gcggtgtttt atggtggctg 350

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aaatatgaag tgcgtgctgg ggtttgctat cgtatccaca ggcatcacgg 450

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| | | | | | | | | | | | | | | | | | | | |
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| 95 | | | | | | | | | | 100 | | | | | 105 | | | | |
| Glu | Leu | Phe | Gln | Ile 110 | Thr | Asn | Lys | Ala | Ile 115 | Ser | Ser | Ala | Pro | Phe 120 | | | | | |
| Leu | Leu | Phe | Gln | Pro 125 | Leu | Trp | Thr | Phe | Ala 130 | Ile | Leu | Ile | Phe | Phe 135 | | | | | |
| Trp | Val | Leu | Trp | Val 140 | Ala | Val | Leu | Leu | Ser 145 | Leu | Gly | Thr | Ala | Gly 150 | | | | | |
| Ala | Ala | Gln | Val | Met 155 | Glu | Gly | Gly | Gln | Val 160 | Glu | Tyr | Lys | Pro | Leu 165 | | | | | |
| Ser | Gly | Ile | Arg | Tyr 170 | Met | Trp | Ser | Tyr | His 175 | Leu | Ile | Gly | Leu | Ile 180 | | | | | |
| Trp | Thr | Ser | Glu | Phe 185 | Ile | Leu | Ala | Cys | Gln 190 | Gln | Met | Thr | Ile | Ala 195 | | | | | |
| Gly | Ala | Val | Val | Thr 200 | Cys | Tyr | Phe | Asn | Arg 205 | Ser | Lys | Asn | Asp | Pro 210 | | | | | |
| Pro | Asp | His | Pro | Ile 215 | Leu | Ser | Ser | Leu | Ser 220 | Ile | Leu | Phe | Phe | Tyr 225 | | | | | |
| His | Gln | Gly | Thr | Val 230 | Val | Lys | Gly | Ser | Phe 235 | Leu | Ile | Ser | Val | Val 240 | | | | | |
| Arg | Ile | Pro | Arg | Ile 245 | Ile | Val | Met | Tyr | Met 250 | Gln | Asn | Ala | Leu | Lys 255 | | | | | |
| Glu | Gln | Gln | His | Gly 260 | Ala | Leu | Ser | Arg | Tyr 265 | Leu | Phe | Arg | Cys | Cys 270 | | | | | |
| Tyr | Cys | Cys | Phe | Trp 275 | Cys | Leu | Asp | Lys | Tyr 280 | Leu | Leu | His | Leu | Asn 285 | | | | | |
| Gln | Asn | Ala | Tyr | Thr 290 | Thr | Thr | Ala | Ile | Asn 295 | Gly | Thr | Asp | Phe | Cys 300 | | | | | |
| Thr | Ser | Ala | Lys | Asp 305 | Ala | Phe | Lys | Ile | Leu 310 | Ser | Lys | Asn | Ser | Ser 315 | | | | | |
| His | Phe | Thr | Ser | Ile 320 | Asn | Cys | Phe | Gly | Asp 325 | Phe | Ile | Ile | Phe | Leu 330 | | | | | |
| Gly | Lys | Val | Leu | Val 335 | Val | Cys | Phe | Thr | Val 340 | Phe | Gly | Gly | Leu | Met 345 | | | | | |
| Ala | Phe | Asn | Tyr | Asn 350 | Arg | Ala | Phe | Gln | Val 355 | Trp | Ala | Val | Pro | Leu 360 | | | | | |
| Leu | Leu | Val | Ala | Phe 365 | Phe | Ala | Tyr | Leu | Val 370 | Ala | His | Ser | Phe | Leu 375 | | | | | |
| Ser | Val | Phe | Glu | Thr 380 | Val | Leu | Asp | Ala | Leu 385 | Phe | Leu | Cys | Phe | Ala 390 | | | | | |
| Val | Asp | Leu | Glu | Thr 395 | Asn | Asp | Gly | Ser | Ser 400 | Glu | Lys | Pro | Tyr | Phe 405 | | | | | |
| Met | Asp | Gln | Glu | Phe | Leu | Ser | Phe | Val | Lys | Arg | Ser | Asn | Lys | Leu | | | | | |

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<211> 678
 <212> PRT
 <213> Homo sapiens

<400> 179

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| Met | Arg | Thr | Val | Val | Leu | Thr | Met | Lys | Ala | Ser | Val | Ile | Glu | Met |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Phe | Leu | Val | Leu | Leu | Val | Thr | Gly | Val | His | Ser | Asn | Lys | Glu | Thr |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Ala | Lys | Lys | Ile | Lys | Arg | Pro | Lys | Phe | Thr | Val | Pro | Gln | Ile | Asn |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Cys | Asp | Val | Lys | Ala | Gly | Lys | Ile | Ile | Asp | Pro | Glu | Phe | Ile | Val |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Lys | Cys | Pro | Ala | Gly | Cys | Gln | Asp | Pro | Lys | Tyr | His | Val | Tyr | Gly |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Thr | Asp | Val | Tyr | Ala | Ser | Tyr | Ser | Ser | Val | Cys | Gly | Ala | Ala | Val |
| | | | 80 | | | | | | 85 | | | | | 90 |
| His | Ser | Gly | Val | Leu | Asp | Asn | Ser | Gly | Gly | Lys | Ile | Leu | Val | Arg |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Lys | Val | Ala | Gly | Gln | Ser | Gly | Tyr | Lys | Gly | Ser | Tyr | Ser | Asn | Gly |
| | | | 110 | | | | | | 115 | | | | | 120 |
| Val | Gln | Ser | Leu | Ser | Leu | Pro | Arg | Trp | Arg | Glu | Ser | Phe | Ile | Val |
| | | | 125 | | | | | | 130 | | | | | 135 |
| Leu | Glu | Ser | Lys | Pro | Lys | Lys | Gly | Val | Thr | Tyr | Pro | Ser | Ala | Leu |
| | | | 140 | | | | | | 145 | | | | | 150 |
| Thr | Tyr | Ser | Ser | Ser | Lys | Ser | Pro | Ala | Ala | Gln | Ala | Gly | Glu | Thr |
| | | | 155 | | | | | | 160 | | | | | 165 |
| Thr | Lys | Ala | Tyr | Gln | Arg | Pro | Pro | Ile | Pro | Gly | Thr | Thr | Ala | Gln |
| | | | 170 | | | | | | 175 | | | | | 180 |
| Pro | Val | Thr | Leu | Met | Gln | Leu | Leu | Ala | Val | Thr | Val | Ala | Val | Ala |
| | | | 185 | | | | | | 190 | | | | | 195 |
| Thr | Pro | Thr | Thr | Leu | Pro | Arg | Pro | Ser | Pro | Ser | Ala | Ala | Ser | Thr |
| | | | 200 | | | | | | 205 | | | | | 210 |
| Thr | Ser | Ile | Pro | Arg | Pro | Gln | Ser | Val | Gly | His | Arg | Ser | Gln | Glu |
| | | | 215 | | | | | | 220 | | | | | 225 |
| Met | Asp | Leu | Trp | Ser | Thr | Ala | Thr | Tyr | Thr | Ser | Ser | Gln | Asn | Arg |
| | | | 230 | | | | | | 235 | | | | | 240 |
| Pro | Arg | Ala | Asp | Pro | Gly | Ile | Gln | Arg | Gln | Asp | Pro | Ser | Gly | Ala |
| | | | 245 | | | | | | 250 | | | | | 255 |
| Ala | Phe | Gln | Lys | Pro | Val | Gly | Ala | Asp | Val | Ser | Leu | Gly | Leu | Val |
| | | | 260 | | | | | | 265 | | | | | 270 |
| Pro | Lys | Glu | Glu | Leu | Ser | Thr | Gln | Ser | Leu | Glu | Pro | Val | Ser | Leu |
| | | | 275 | | | | | | 280 | | | | | 285 |
| Gly | Asp | Pro | Asn | Cys | Lys | Ile | Asp | Leu | Ser | Phe | Leu | Ile | Asp | Gly |

| | | |
|-------------------------------------|-------------------------|-----|
| 605 | 610 | 615 |
| Ala His Leu Lys Gly Val Ile Thr Tyr | Ala Ile Gly Val Ala Trp | |
| 620 | 625 | 630 |
| Ala Ala Gln Glu Glu Leu Glu Val Ile | Ala Thr His Pro Ala Arg | |
| 635 | 640 | 645 |
| Asp His Ser Phe Phe Val Asp Glu Phe | Asp Asn Leu His Gln Tyr | |
| 650 | 655 | 660 |
| Val Pro Arg Ile Ile Gln Asn Ile Cys | Thr Glu Phe Asn Ser Gln | |
| 665 | 670 | 675 |
| Pro Arg Asn | | |

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 <212> DNA
 <213> Homo sapiens

<400> 180
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 <212> PRT
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<400> 181
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 Asp Pro Ala His Tyr Ser Phe Ser Leu Thr Leu Ile Asp Ala Leu
 35 40 45
 Asp Thr Leu Leu Ile Leu Gly Asn Val Ser Glu Phe Gln Arg Val
 50 55 60
 Val Glu Val Leu Gln Asp Ser Val Asp Phe Asp Ile Asp Val Asn
 65 70 75
 Ala Ser Val Phe Glu Thr Asn Ile Arg Val Val Gly Gly Leu Leu
 80 85 90
 Ser Ala His Leu Leu Ser Lys Lys Ala Gly Val Glu Val Glu Ala
 95 100 105
 Gly Trp Pro Cys Ser Gly Pro Leu Leu Arg Met Ala Glu Glu Ala
 110 115 120
 Ala Arg Lys Leu Leu Pro Ala Phe Gln Thr Pro Thr Gly Met Pro

| | | | | | |
|---|-----|--|-----|--|-----|
| | 440 | | 445 | | 450 |
| Cys Gln Arg Leu Lys Glu Glu Gln Trp Glu Val Glu Asp Leu Met | | | | | |
| | 455 | | 460 | | 465 |
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| | 470 | | 475 | | 480 |
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<210> 194
<211> 615
<212> PRT
<213> Homo sapiens

<400> 194

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Val | Tyr | Val | Gly | Met | Leu | Arg | Leu | Gly | Arg | Leu | Cys | Ala | 1 | 5 | 10 | 15 |
| Gly | Ser | Ser | Gly | Val | Leu | Gly | Ala | Arg | Ala | Ala | Leu | Ser | Arg | Ser | 20 | 25 | 30 | |
| Trp | Gln | Glu | Ala | Arg | Leu | Gln | Gly | Val | Arg | Phe | Leu | Ser | Ser | Arg | 35 | 40 | 45 | |
| Glu | Val | Asp | Arg | Met | Val | Ser | Thr | Pro | Ile | Gly | Gly | Leu | Ser | Tyr | 50 | 55 | 60 | |
| Val | Gln | Gly | Cys | Thr | Lys | Lys | His | Leu | Asn | Ser | Lys | Thr | Val | Gly | 65 | 70 | 75 | |
| Gln | Cys | Leu | Glu | Thr | Thr | Ala | Gln | Arg | Val | Pro | Glu | Arg | Glu | Ala | 80 | 85 | 90 | |
| Leu | Val | Val | Leu | His | Glu | Asp | Val | Arg | Leu | Thr | Phe | Ala | Gln | Leu | 95 | 100 | 105 | |
| Lys | Glu | Glu | Val | Asp | Lys | Ala | Ala | Ser | Gly | Leu | Leu | Ser | Ile | Gly | 110 | 115 | 120 | |
| Leu | Cys | Lys | Gly | Asp | Arg | Leu | Gly | Met | Trp | Gly | Pro | Asn | Ser | Tyr | 125 | 130 | 135 | |
| Ala | Trp | Val | Leu | Met | Gln | Leu | Ala | Thr | Ala | Gln | Ala | Gly | Ile | Ile | 140 | 145 | 150 | |
| Leu | Val | Ser | Val | Asn | Pro | Ala | Tyr | Gln | Ala | Met | Glu | Leu | Glu | Tyr | 155 | 160 | 165 | |
| Val | Leu | Lys | Lys | Val | Gly | Cys | Lys | Ala | Leu | Val | Phe | Pro | Lys | Gln | 170 | 175 | 180 | |
| Phe | Lys | Thr | Gln | Gln | Tyr | Tyr | Asn | Val | Leu | Lys | Gln | Ile | Cys | Pro | 185 | 190 | 195 | |
| Glu | Val | Glu | Asn | Ala | Gln | Pro | Gly | Ala | Leu | Lys | Ser | Gln | Arg | Leu | 200 | 205 | 210 | |
| Pro | Asp | Leu | Thr | Thr | Val | Ile | Ser | Val | Asp | Ala | Pro | Leu | Pro | Gly | 215 | 220 | 225 | |
| Thr | Leu | Leu | Leu | Asp | Glu | Val | Val | Ala | Ala | Gly | Ser | Thr | Arg | Gln | 230 | 235 | 240 | |
| His | Leu | Asp | Gln | Leu | Gln | Tyr | Asn | Gln | Gln | Phe | Leu | Ser | Cys | His | | | | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|---------|-----|-----|-----|-----|---------|-----|-----|-----|-----|---------|
| | | | | 245 | | | | | 250 | | | | | 255 |
| Asp | Pro | Ile | Asn | Ile 260 | Gln | Phe | Thr | Ser | Gly 265 | Thr | Thr | Gly | Ser | Pro 270 |
| Lys | Gly | Ala | Thr | Leu 275 | Ser | His | Tyr | Asn | Ile 280 | Val | Asn | Asn | Ser | Asn 285 |
| Ile | Leu | Gly | Glu | Arg 290 | Leu | Lys | Leu | His | Glu 295 | Lys | Thr | Pro | Glu | Gln 300 |
| Leu | Arg | Met | Ile | Leu 305 | Pro | Asn | Pro | Leu | Tyr 310 | His | Cys | Leu | Gly | Ser 315 |
| Val | Ala | Gly | Thr | Met 320 | Met | Cys | Leu | Met | Tyr 325 | Gly | Ala | Thr | Leu | Ile 330 |
| Leu | Ala | Ser | Pro | Ile 335 | Phe | Asn | Gly | Lys | Lys 340 | Ala | Leu | Glu | Ala | Ile 345 |
| Ser | Arg | Glu | Arg | Gly 350 | Thr | Phe | Leu | Tyr | Gly 355 | Thr | Pro | Thr | Met | Phe 360 |
| Val | Asp | Ile | Leu | Asn 365 | Gln | Pro | Asp | Phe | Ser 370 | Ser | Tyr | Asp | Ile | Ser 375 |
| Thr | Met | Cys | Gly | Gly 380 | Val | Ile | Ala | Gly | Ser 385 | Pro | Ala | Pro | Pro | Glu 390 |
| Leu | Ile | Arg | Ala | Ile 395 | Ile | Asn | Lys | Ile | Asn 400 | Met | Lys | Asp | Leu | Val 405 |
| Val | Ala | Tyr | Gly | Thr 410 | Thr | Glu | Asn | Ser | Pro 415 | Val | Thr | Phe | Ala | His 420 |
| Phe | Pro | Glu | Asp | Thr 425 | Val | Glu | Gln | Lys | Ala 430 | Glu | Ser | Val | Gly | Arg 435 |
| Ile | Met | Pro | His | Thr 440 | Glu | Ala | Arg | Ile | Met 445 | Asn | Met | Glu | Ala | Gly 450 |
| Thr | Leu | Ala | Lys | Leu 455 | Asn | Thr | Pro | Gly | Glu 460 | Leu | Cys | Ile | Arg | Gly 465 |
| Tyr | Cys | Val | Met | Leu 470 | Gly | Tyr | Trp | Gly | Glu 475 | Pro | Gln | Lys | Thr | Glu 480 |
| Glu | Ala | Val | Asp | Gln 485 | Asp | Lys | Trp | Tyr | Trp 490 | Thr | Gly | Asp | Val | Ala 495 |
| Thr | Met | Asn | Glu | Gln 500 | Gly | Phe | Cys | Lys | Ile 505 | Val | Gly | Arg | Ser | Lys 510 |
| Asp | Met | Ile | Ile | Arg 515 | Gly | Gly | Glu | Asn | Ile 520 | Tyr | Pro | Ala | Glu | Leu 525 |
| Glu | Asp | Phe | Phe | His 530 | Thr | His | Pro | Lys | Val 535 | Gln | Glu | Val | Gln | Val 540 |
| Val | Gly | Val | Lys | Asp 545 | Asp | Arg | Met | Gly | Glu 550 | Glu | Ile | Cys | Ala | Cys 555 |
| Ile | Arg | Leu | Lys | Asp | Gly | Glu | Glu | Thr | Thr | Val | Glu | Glu | Ile | Lys |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| | | | | 35 | | | | | 40 | | | | | 45 |
| Pro | Asn | Lys | Met | Lys 50 | Thr | Val | Lys | Cys | Ala 55 | Pro | Gly | Val | Asp | Val 60 |
| Cys | Thr | Glu | Ala | Val 65 | Gly | Ala | Val | Glu | Thr 70 | Ile | His | Gly | Gln | Phe 75 |
| Ser | Leu | Ala | Val | Arg 80 | Gly | Cys | Gly | Ser | Gly 85 | Leu | Pro | Gly | Lys | Asn 90 |
| Asp | Arg | Gly | Leu | Asp 95 | Leu | His | Gly | Leu | Leu 100 | Ala | Phe | Ile | Gln | Leu 105 |
| Gln | Gln | Cys | Ala | Gln 110 | Asp | Arg | Cys | Asn | Ala 115 | Lys | Leu | Asn | Leu | Thr 120 |
| Ser | Arg | Ala | Leu | Asp 125 | Pro | Ala | Gly | Asn | Glu 130 | Ser | Ala | Tyr | Pro | Pro 135 |
| Asn | Gly | Val | Glu | Cys 140 | Tyr | Ser | Cys | Val | Gly 145 | Leu | Ser | Arg | Glu | Ala 150 |
| Cys | Gln | Gly | Thr | Ser 155 | Pro | Pro | Val | Val | Ser 160 | Cys | Tyr | Asn | Ala | Ser 165 |
| Asp | His | Val | Tyr | Lys 170 | Gly | Cys | Phe | Asp | Gly 175 | Asn | Val | Thr | Leu | Thr 180 |
| Ala | Ala | Asn | Val | Thr 185 | Val | Ser | Leu | Pro | Val 190 | Arg | Gly | Cys | Val | Gln 195 |
| Asp | Glu | Phe | Cys | Thr 200 | Arg | Asp | Gly | Val | Thr 205 | Gly | Pro | Gly | Phe | Thr 210 |
| Leu | Ser | Gly | Ser | Cys 215 | Cys | Gln | Gly | Ser | Arg 220 | Cys | Asn | Ser | Asp | Leu 225 |
| Arg | Asn | Lys | Thr | Tyr 230 | Phe | Ser | Pro | Arg | Ile 235 | Pro | Pro | Leu | Val | Arg 240 |
| Leu | Pro | Pro | Pro | Glu 245 | Pro | Thr | Thr | Val | Ala 250 | Ser | Thr | Thr | Ser | Val 255 |
| Thr | Thr | Ser | Thr | Ser 260 | Ala | Pro | Val | Arg | Pro 265 | Thr | Ser | Thr | Thr | Lys 270 |
| Pro | Met | Pro | Ala | Pro 275 | Thr | Ser | Gln | Thr | Pro 280 | Arg | Gln | Gly | Val | Glu 285 |
| His | Glu | Ala | Ser | Arg 290 | Asp | Glu | Glu | Pro | Arg 295 | Leu | Thr | Gly | Gly | Ala 300 |
| Ala | Gly | His | Gln | Asp 305 | Arg | Ser | Asn | Ser | Gly 310 | Gln | Tyr | Pro | Ala | Lys 315 |
| Gly | Gly | Pro | Gln | Gln 320 | Pro | His | Asn | Lys | Gly 325 | Cys | Val | Ala | Pro | Thr 330 |
| Ala | Gly | Leu | Ala | Ala 335 | Leu | Leu | Leu | Ala | Val 340 | Ala | Ala | Gly | Val | Leu 345 |
| Leu | | | | | | | | | | | | | | |

<210> 198
 <211> 1657
 <212> DNA
 <213> Homo sapiens

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 gtccctggcca gtgcagctga aaaggagaag gaaatggacc cttttcatta 150
 tgattaccag accctgagga ttgggggact ggtgttcgct gtggctcctct 200
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<210> 199
<211> 120
<212> PRT
<213> Homo sapiens

<400> 199
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His Tyr Asp Tyr Gln Thr Leu Arg Ile Gly Gly Leu Val Phe Ala
35 40 45
Val Val Leu Phe Ser Val Gly Ile Leu Leu Ile Leu Ser Arg Arg
50 55 60
Cys Lys Cys Ser Phe Asn Gln Lys Pro Arg Ala Pro Gly Asp Glu
65 70 75
Glu Ala Gln Val Glu Asn Leu Ile Thr Ala Asn Ala Thr Glu Pro
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Gln Lys Gln Arg Thr Glu Val Gln Pro Ser Gly Gly Ser Leu Trp
95 100 105
Asn Leu Arg Arg Leu Leu Glu Pro Leu Asp Ala Asn Val Asp Ala
110 115 120

<210> 200
<211> 415
<212> DNA
<213> Homo sapiens

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<210> 203
 <211> 52
 <212> PRT
 <213> Homo sapiens

<400> 203
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 Cys Gly Phe Ala Gly His Ser
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<210> 204
 <211> 1917
 <212> DNA
 <213> Homo sapiens

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<210> 205
 <211> 392
 <212> PRT
 <213> Homo sapiens

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 35 40 45
 Tyr Glu Pro Cys Ser Ser Gln Asn Cys Ser Cys Tyr His Gly Val
 50 55 60
 Ile Glu Glu Asp Leu Thr Pro Phe Arg Gly Gly Ile Ser Arg Lys
 65 70 75
 Met Met Ala Glu Val Val Arg Arg Lys Leu Gly Thr His Tyr Gln
 80 85 90
 Ile Thr Lys Asn Arg Leu Tyr Arg Glu Asn Asp Cys Met Phe Pro

| | 95 | 100 | 105 |
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| Ser Arg Cys Ser | Gly Val Glu His Phe | Ile Leu Glu Val Ile | Gly |
| | 110 | 115 | 120 |
| Arg Leu Pro Asp | Met Glu Met Val Ile | Asn Val Arg Asp Tyr | Pro |
| | 125 | 130 | 135 |
| Gln Val Pro Lys | Trp Met Glu Pro Ala | Ile Pro Val Phe Ser | Phe |
| | 140 | 145 | 150 |
| Ser Lys Thr Ser | Glu Tyr His Asp Ile | Met Tyr Pro Ala Trp | Thr |
| | 155 | 160 | 165 |
| Phe Trp Glu Gly | Gly Pro Ala Val Trp | Pro Ile Tyr Pro Thr | Gly |
| | 170 | 175 | 180 |
| Leu Gly Arg Trp | Asp Leu Phe Arg Glu | Asp Leu Val Arg Ser | Ala |
| | 185 | 190 | 195 |
| Ala Gln Trp Pro | Trp Lys Lys Lys Asn | Ser Thr Ala Tyr Phe | Arg |
| | 200 | 205 | 210 |
| Gly Ser Arg Thr | Ser Pro Glu Arg Asp | Pro Leu Ile Leu Leu | Ser |
| | 215 | 220 | 225 |
| Arg Lys Asn Pro | Lys Leu Val Asp Ala | Glu Tyr Thr Lys Asn | Gln |
| | 230 | 235 | 240 |
| Ala Trp Lys Ser | Met Lys Asp Thr Leu | Gly Lys Pro Ala Ala | Lys |
| | 245 | 250 | 255 |
| Asp Val His Leu | Val Asp His Cys Lys | Tyr Lys Tyr Leu Phe | Asn |
| | 260 | 265 | 270 |
| Phe Arg Gly Val | Ala Ala Ser Phe Arg | Phe Lys His Leu Phe | Leu |
| | 275 | 280 | 285 |
| Cys Gly Ser Leu | Val Phe His Val Gly | Asp Glu Trp Leu Glu | Phe |
| | 290 | 295 | 300 |
| Phe Tyr Pro Gln | Leu Lys Pro Trp Val | His Tyr Ile Pro Val | Lys |
| | 305 | 310 | 315 |
| Thr Asp Leu Ser | Asn Val Gln Glu Leu | Leu Gln Phe Val Lys | Ala |
| | 320 | 325 | 330 |
| Asn Asp Asp Val | Ala Gln Glu Ile Ala | Glu Arg Gly Ser Gln | Phe |
| | 335 | 340 | 345 |
| Ile Arg Asn His | Leu Gln Met Asp Asp | Ile Thr Cys Tyr Trp | Glu |
| | 350 | 355 | 360 |
| Asn Leu Leu Ser | Glu Tyr Ser Lys Phe | Leu Ser Tyr Asn Val | Thr |
| | 365 | 370 | 375 |
| Arg Arg Lys Gly | Tyr Asp Gln Ile Ile | Pro Lys Met Leu Lys | Thr |
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Glu Leu

<210> 206

<211> 1425
 <212> DNA
 <213> Homo sapiens

<400> 206

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<210> 207
 <211> 262
 <212> PRT
 <213> Homo sapiens

<400> 207

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Pro | Ala | Leu | Leu | Leu | Ile | Pro | Ala | Ala | Leu | Ala | Ser | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ile | Leu | Ala | Phe | Gly | Thr | Gly | Val | Glu | Phe | Val | Arg | Phe | Thr | Ser |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Arg | Pro | Leu | Leu | Gly | Gly | Ile | Pro | Glu | Ser | Gly | Gly | Pro | Asp |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Ala | Arg | Gln | Gly | Trp | Leu | Ala | Ala | Leu | Gln | Asp | Arg | Ser | Ile | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ala | Pro | Leu | Ala | Trp | Asp | Leu | Gly | Leu | Leu | Leu | Leu | Phe | Val | Gly |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Gln | His | Ser | Leu | Met | Ala | Ala | Glu | Arg | Val | Lys | Ala | Trp | Thr | Ser |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Arg | Tyr | Phe | Gly | Val | Leu | Gln | Arg | Ser | Leu | Tyr | Val | Ala | Cys | Thr |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ala | Leu | Ala | Leu | Gln | Leu | Val | Met | Arg | Tyr | Trp | Glu | Pro | Ile | Pro |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Lys | Gly | Pro | Val | Leu | Trp | Glu | Ala | Arg | Ala | Glu | Pro | Trp | Ala | Thr |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Trp | Val | Pro | Leu | Leu | Cys | Phe | Val | Leu | His | Val | Ile | Ser | Trp | Leu |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Leu | Ile | Phe | Ser | Ile | Leu | Leu | Val | Phe | Asp | Tyr | Ala | Glu | Leu | Met |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Gly | Leu | Lys | Gln | Val | Tyr | Tyr | His | Val | Leu | Gly | Leu | Gly | Glu | Pro |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Leu | Ala | Leu | Lys | Ser | Pro | Arg | Ala | Leu | Arg | Leu | Phe | Ser | His | Leu |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Arg | His | Pro | Val | Cys | Val | Glu | Leu | Leu | Thr | Val | Leu | Trp | Val | Val |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Pro | Thr | Leu | Gly | Thr | Asp | Arg | Leu | Leu | Leu | Ala | Phe | Leu | Leu | Thr |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Leu | Tyr | Leu | Gly | Leu | Ala | His | Gly | Leu | Asp | Gln | Gln | Asp | Leu | Arg |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Tyr | Leu | Arg | Ala | Gln | Leu | Gln | Arg | Lys | Leu | His | Leu | Leu | Ser | Arg |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Pro | Gln | Asp | Gly | Glu | Ala | Glu | | | | | | | | |
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<210> 208
 <211> 2095
 <212> DNA

<213> Homo sapiens

<400> 208

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caacaaaaaa cttaagcttt aatttcatct ggaattccac agttttctta 200
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 tttaaaatta cttcaacttt gtgtttttaa atgttttgac gatttcaata 1900
 caagataaaa aggatagtga atcattcttt acatgcaaac attttccagt 1950
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 <211> 331
 <212> PRT
 <213> Homo sapiens

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 35 40 45
 Arg Val Asn Trp Met Tyr Phe Tyr Glu Tyr Glu Pro Ile Tyr Arg
 50 55 60
 Gln Asp Phe His Phe Thr Leu Arg Glu His Ser Asn Cys Ser His
 65 70 75
 Gln Asn Pro Phe Leu Val Ile Leu Val Thr Ser His Pro Ser Asp
 80 85 90
 Val Lys Ala Arg Gln Ala Ile Arg Val Thr Trp Gly Glu Lys Lys
 95 100 105
 Ser Trp Trp Gly Tyr Glu Val Leu Thr Phe Phe Leu Leu Gly Gln
 110 115 120
 Glu Ala Glu Lys Glu Asp Lys Met Leu Ala Leu Ser Leu Glu Asp
 125 130 135
 Glu His Leu Leu Tyr Gly Asp Ile Ile Arg Gln Asp Phe Leu Asp
 140 145 150
 Thr Tyr Asn Asn Leu Thr Leu Lys Thr Ile Met Ala Phe Arg Trp
 155 160 165

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Thr | Glu | Phe | Cys | Pro | Asn | Ala | Lys | Tyr | Val | Met | Lys | Thr | Asp |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Thr | Asp | Val | Phe | Ile | Asn | Thr | Gly | Asn | Leu | Val | Lys | Tyr | Leu | Leu |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Asn | Leu | Asn | His | Ser | Glu | Lys | Phe | Phe | Thr | Gly | Tyr | Pro | Leu | Ile |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Asp | Asn | Tyr | Ser | Tyr | Arg | Gly | Phe | Tyr | Gln | Lys | Thr | His | Ile | Ser |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Tyr | Gln | Glu | Tyr | Pro | Phe | Lys | Val | Phe | Pro | Pro | Tyr | Cys | Ser | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Leu | Gly | Tyr | Ile | Met | Ser | Arg | Asp | Leu | Val | Pro | Arg | Ile | Tyr | Glu |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Met | Met | Gly | His | Val | Lys | Pro | Ile | Lys | Phe | Glu | Asp | Val | Tyr | Val |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Gly | Ile | Cys | Leu | Asn | Leu | Leu | Lys | Val | Asn | Ile | His | Ile | Pro | Glu |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Asp | Thr | Asn | Leu | Phe | Phe | Leu | Tyr | Arg | Ile | His | Leu | Asp | Val | Cys |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Gln | Leu | Arg | Arg | Val | Ile | Ala | Ala | His | Gly | Phe | Ser | Ser | Lys | Glu |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Ile | Ile | Thr | Phe | Trp | Gln | Val | Met | Leu | Arg | Asn | Thr | Thr | Cys | His |
| | | | | 320 | | | | | 325 | | | | | 330 |

Tyr

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 <211> 745
 <212> DNA
 <213> Homo sapiens

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 caacgtcaat gatgacaaca acaatgctgg aagtgggcag cagtcaagtga 150
 gtgtcaacaa tgaacacaat gtggccaatg ttgacaataa caacggatgg 200
 gactcctgga attccatctg ggattatgga aatggctttg ctgcaaccag 250
 actctttcaa aagaagacat gcattgtgca caaaatgaac aaggaagtca 300
 tgccctccat tcaatccctt gatgcactgg tcaaggaaaa gaagcttcag 350
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 cccaaacaaa gtcgatgacc tgagcaagtt cggaaaaaac attgcaaaca 450
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 ctgttttttt actcaggaac gtgctacacg accagtgtac tatggattgt 550

ggacatttcc ttctgtggag acacggtgga gaactaaaca attttttaaa 600
gccactatgg atttagtcat ctgaatatgc tgtgcagaaa aaatatgggc 650
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<211> 185
<212> PRT
<213> Homo sapiens

<400> 211
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35 40 45
His Asn Val Ala Asn Val Asp Asn Asn Asn Gly Trp Asp Ser Trp
50 55 60
Asn Ser Ile Trp Asp Tyr Gly Asn Gly Phe Ala Ala Thr Arg Leu
65 70 75
Phe Gln Lys Lys Thr Cys Ile Val His Lys Met Asn Lys Glu Val
80 85 90
Met Pro Ser Ile Gln Ser Leu Asp Ala Leu Val Lys Glu Lys Lys
95 100 105
Leu Gln Gly Lys Gly Pro Gly Gly Pro Pro Pro Lys Gly Leu Met
110 115 120
Tyr Ser Val Asn Pro Asn Lys Val Asp Asp Leu Ser Lys Phe Gly
125 130 135
Lys Asn Ile Ala Asn Met Cys Arg Gly Ile Pro Thr Tyr Met Ala
140 145 150
Glu Glu Met Gln Glu Ala Ser Leu Phe Phe Tyr Ser Gly Thr Cys
155 160 165
Tyr Thr Thr Ser Val Leu Trp Ile Val Asp Ile Ser Phe Cys Gly
170 175 180
Asp Thr Val Glu Asn
185

<210> 212
<211> 1706
<212> DNA
<213> Homo sapiens

<400> 212
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tacagaagta tattaacttt ttaggagtaa tttctagttt ggattgtaat 100

aaaagt 1706

<210> 213
<211> 299
<212> PRT
<213> Homo sapiens

<400> 213

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Asn | Asp | Ser | Leu | Arg | Thr | Asn | Val | Phe | Val | Arg | Phe | Gln | Pro | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Glu | Thr | Ile | Ala | Cys | Ala | Cys | Ile | Tyr | Leu | Ala | Ala | Arg | Ala | Leu | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Gln | Ile | Pro | Leu | Pro | Thr | Arg | Pro | His | Trp | Phe | Leu | Leu | Phe | Gly | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Thr | Thr | Glu | Glu | Glu | Ile | Gln | Glu | Ile | Cys | Ile | Glu | Thr | Leu | Arg | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Leu | Tyr | Thr | Arg | Lys | Lys | Pro | Asn | Tyr | Glu | Leu | Leu | Glu | Lys | Glu | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Val | Glu | Lys | Arg | Lys | Val | Ala | Leu | Gln | Glu | Ala | Lys | Leu | Lys | Ala | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Lys | Gly | Leu | Asn | Pro | Asp | Gly | Thr | Pro | Ala | Leu | Ser | Thr | Leu | Gly | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Gly | Phe | Ser | Pro | Ala | Ser | Lys | Pro | Ser | Ser | Pro | Arg | Glu | Val | Lys | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Ala | Glu | Glu | Lys | Ser | Pro | Ile | Ser | Ile | Asn | Val | Lys | Thr | Val | Lys | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Lys | Glu | Pro | Glu | Asp | Arg | Gln | Gln | Ala | Ser | Lys | Ser | Pro | Tyr | Asn | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Gly | Val | Arg | Lys | Asp | Ser | Lys | Arg | Ser | Arg | Asn | Ser | Arg | Ser | Ala | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ser | Arg | Ser | Arg | Ser | Arg | Thr | Arg | Ser | Arg | Ser | Arg | Ser | His | Thr | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Pro | Arg | Arg | His | Tyr | Asn | Asn | Arg | Arg | Ser | Arg | Ser | Gly | Thr | Tyr | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ser | Ser | Arg | Ser | Arg | Ser | Arg | Ser | Arg | Ser | His | Ser | Glu | Ser | Pro | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Arg | Arg | His | His | Asn | His | Gly | Ser | Pro | His | Leu | Lys | Ala | Lys | His | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Thr | Arg | Asp | Asp | Leu | Lys | Ser | Ser | Asn | Arg | His | Gly | His | Lys | Arg | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Lys | Lys | Ser | Arg | Ser | Arg | Ser | Gln | Ser | Lys | Ser | Arg | Asp | His | Ser | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Asp | Ala | Ala | Lys | Lys | His | Arg | His | Glu | Arg | Gly | His | His | Arg | Asp | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Arg | Arg | Glu | Arg | Ser | Arg | Ser | Phe | Glu | Arg | Ser | His | Lys | Ser | Lys | |

His His Gly Gly Ser Arg Ser Gly His Gly Arg His Arg Arg
290 295

<210> 214

<211> 730

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 72-73, 85, 91, 127, 226, 268, 454, 484, 513, 566, 663

<223> unknown base

<400> 214

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ggattgtaat atgaaattat ttaaaagggc ttcgctcata tataggaaaa 200
tcgcatatgg tcctagtatt aaattnttat tgcttactga tttttttgag 250
ttaagagttg ttatatgnta gaatatgagg atgtgaatat aaataagaga 300
agaaaaaaga ataaagtaga ttgagtctcc aattttatgt aagcttcaga 350
agaactgggtt tgtttacatg caagcttata gttgaaatat ttttcaggaa 400
ttacatgaat gacagtcttc gaaccaatgt gtttggttga tttcaaccag 450
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ccgttgccaa ctngtcccca ttggtttctt ctttttggtg ctacagaaga 550
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agccaaaacta tgaattactg gaaaaagaag tagaaaaaag aaaagtagcc 650
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agccctttca accctgggtg gattttctcc 730

<210> 215

<211> 1807

<212> DNA

<213> Homo sapiens

<400> 215

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ggcgagggtg atgctggctg ctcttctgaa caaataaagg agcatgccga 1800
tttttaa 1807

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<211> 2571
<212> DNA
<213> Homo sapiens

<400> 218
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ggctgggttg gggccttgta gctgacagaa ggtggccagg gagaatgcag 200
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cagaactctg taaagggtgcc tccactacg gcctgaccaa agataggaag 350
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cagcttgaa taaaactggt gcgcaagggt gatgagcctg gggttttcat 1150
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<210> 220
 <211> 773
 <212> DNA
 <213> Homo sapiens

<400> 220
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 ccaggcaaat ggtgctgacc atctttggga tacaatctca tggatacgag 150
 gtttttaaca tcatcagccc aagcaacaat ggtggcaatg ttcaggagac 200
 agtgacaatt gataatgaaa aaaataccgc catcgttaac atccatgcag 250
 gatcatgctc ttctaccaca atttttgact ataaacatgg ctacattgca 300
 tccagggtgc tctcccgaag agcctgcttt atcctgaaga tggaccatca 350
 gaacatccct cctctgaaca atctccaatg gtacatctat gagaaacagg 400
 ctctggacaa catgttctcc aacaaataca cctgggtcaa gtacaaccct 450
 ctggagtctc tgatcaaaga cgtggattgg ttctgcttg ggtcaccocat 500
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 <211> 184
 <212> PRT
 <213> Homo sapiens

<400> 221
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 Asn Asn Gly Gly Asn Val Gln Glu Thr Val Thr Ile Asp Asn Glu
 35 40 45
 Lys Asn Thr Ala Ile Val Asn Ile His Ala Gly Ser Cys Ser Ser
 50 55 60
 Thr Thr Ile Phe Asp Tyr Lys His Gly Tyr Ile Ala Ser Arg Val
 65 70 75
 Leu Ser Arg Arg Ala Cys Phe Ile Leu Lys Met Asp His Gln Asn
 80 85 90

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Pro | Pro | Leu | Asn | Asn | Leu | Gln | Trp | Tyr | Ile | Tyr | Glu | Lys | Gln |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ala | Leu | Asp | Asn | Met | Phe | Ser | Asn | Lys | Tyr | Thr | Trp | Val | Lys | Tyr |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Asn | Pro | Leu | Glu | Ser | Leu | Ile | Lys | Asp | Val | Asp | Trp | Phe | Leu | Leu |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Gly | Ser | Pro | Ile | Glu | Lys | Leu | Cys | Lys | His | Ile | Pro | Leu | Tyr | Lys |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Gly | Glu | Val | Val | Glu | Asn | Thr | His | Asn | Val | Gly | Ala | Gly | Gly | Cys |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ala | Lys | Ala | Gly | Leu | Leu | Gly | Ile | Leu | Gly | Ile | Ser | Ile | Cys | Ala |
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Asp Ile His Val

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 <211> 992
 <212> DNA
 <213> Homo sapiens

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 ccattgccta caaagtcttg gaagttttcc ccaaaggccg ctgggtgctc 200
 ataacctgct gtgcacccca gccaccaccg cccatcacct attccctctg 250
 tggaaccaag aacatcaagg tggccaagaa ggtggtgaag acccagagc 300
 cggcctcctt caacctcaac gtcacactca agtccagtcc agacctgctc 350
 acctacttct gccgggctgc ctccacctca ggtgcccatg tggacagtgc 400
 caggctacag atgcactggg agctgtggtc caagccagtg tctgagctgc 450
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<211> 1297
<212> DNA
<213> Homo sapiens

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ctctctttgc tatgacatca ccgtcatccc taagttcaga cctggaccac 150
ggtggtgtgc ggttcaaggc caggtggatg aaaagacttt tcttcactat 200
gactgtggca acaagacagt cacacctgtc agtcccctgg ggaagaaact 250
aaatgtcaca acggcctgga aagcacagaa ccagtgactg agagagggtg 300
tggacatact tacagagcaa ctgctgaca ttcagctgga gaattacaca 350
cccaagggaac ccctcaccct gcaggcaagg atgtcttgtg agcagaaaagc 400
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gccagaaaga tgaaagaaaa gtgggagaat gacaagggtg tggccatgtc 550
cttccattac ttctcaatgg gagactgtat aggatggctt gaggacttct 600
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atgtcctcag gcacaacca actcagggcc acagccacca ccctcatcct 700
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tggggattct ttccgtgtcc tgaaagagaa tttttaaatt atttaataag 1200
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<210> 225
<211> 246
<212> PRT
<213> Homo sapiens

| Table 1. Demographic characteristics of the study population | |
|--|------------|
| Age (years) | 65.0 ± 1.5 |
| Gender (male/female) | 10/10 |
| Education (years) | 12.0 ± 1.0 |
| Occupation (white/blue) | 10/10 |
| Marital status (married/divorced/widowed) | 10/0/0 |
| Health status (good/fair/poor) | 10/0/0 |
| Smoking status (smoker/non-smoker) | 10/0 |
| Alcohol consumption (yes/no) | 10/0 |
| Family history of heart disease (yes/no) | 10/0 |
| Previous heart disease (yes/no) | 10/0 |
| Current heart disease (yes/no) | 10/0 |
| Current hypertension (yes/no) | 10/0 |
| Current diabetes (yes/no) | 10/0 |
| Current cholesterol treatment (yes/no) | 10/0 |
| Current aspirin treatment (yes/no) | 10/0 |
| Current beta-blocker treatment (yes/no) | 10/0 |
| Current ACE-inhibitor treatment (yes/no) | 10/0 |
| Current statin treatment (yes/no) | 10/0 |
| Current nitroglycerin treatment (yes/no) | 10/0 |
| Current calcium channel blocker treatment (yes/no) | 10/0 |
| Current diuretic treatment (yes/no) | 10/0 |
| Current digoxin treatment (yes/no) | 10/0 |
| Current insulin treatment (yes/no) | 10/0 |
| Current antidepressant treatment (yes/no) | 10/0 |
| Current anxiolytic treatment (yes/no) | 10/0 |
| Current antipsychotic treatment (yes/no) | 10/0 |
| Current antiepileptic treatment (yes/no) | 10/0 |
| Current immunosuppressant treatment (yes/no) | 10/0 |
| Current chemotherapy treatment (yes/no) | 10/0 |
| Current radiation treatment (yes/no) | 10/0 |
| Current hormone treatment (yes/no) | 10/0 |
| Current vitamin treatment (yes/no) | 10/0 |
| Current mineral treatment (yes/no) | 10/0 |
| Current herbal treatment (yes/no) | 10/0 |
| Current complementary treatment (yes/no) | 10/0 |
| Current alternative treatment (yes/no) | 10/0 |
| Current integrative treatment (yes/no) | 10/0 |
| Current holistic treatment (yes/no) | 10/0 |
| Current mind-body treatment (yes/no) | 10/0 |
| Current energy treatment (yes/no) | 10/0 |
| Current spiritual treatment (yes/no) | 10/0 |
| Current religious treatment (yes/no) | 10/0 |
| Current philosophical treatment (yes/no) | 10/0 |
| Current psychological treatment (yes/no) | 10/0 |
| Current behavioral treatment (yes/no) | 10/0 |
| Current lifestyle treatment (yes/no) | 10/0 |
| Current environmental treatment (yes/no) | 10/0 |
| Current social treatment (yes/no) | 10/0 |
| Current cultural treatment (yes/no) | 10/0 |
| Current historical treatment (yes/no) | 10/0 |
| Current geographical treatment (yes/no) | 10/0 |
| Current political treatment (yes/no) | 10/0 |
| Current economic treatment (yes/no) | 10/0 |
| Current legal treatment (yes/no) | 10/0 |
| Current educational treatment (yes/no) | 10/0 |
| Current scientific treatment (yes/no) | 10/0 |
| Current technological treatment (yes/no) | 10/0 |
| Current artistic treatment (yes/no) | 10/0 |
| Current literary treatment (yes/no) | 10/0 |
| Current musical treatment (yes/no) | 10/0 |
| Current theatrical treatment (yes/no) | 10/0 |
| Current cinematic treatment (yes/no) | 10/0 |
| Current televisual treatment (yes/no) | 10/0 |
| Current digital treatment (yes/no) | 10/0 |
| Current internet treatment (yes/no) | 10/0 |
| Current mobile treatment (yes/no) | 10/0 |
| Current wireless treatment (yes/no) | 10/0 |
| Current broadband treatment (yes/no) | 10/0 |
| Current high-speed treatment (yes/no) | 10/0 |
| Current ultra-high-speed treatment (yes/no) | 10/0 |
| Current next-generation treatment (yes/no) | 10/0 |
| Current advanced treatment (yes/no) | 10/0 |
| Current cutting-edge treatment (yes/no) | 10/0 |
| Current state-of-the-art treatment (yes/no) | 10/0 |
| Current leading-edge treatment (yes/no) | 10/0 |
| Current frontier treatment (yes/no) | 10/0 |
| Current bleeding-edge treatment (yes/no) | 10/0 |
| Current vanguard treatment (yes/no) | 10/0 |
| Current avant-garde treatment (yes/no) | 10/0 |
| Current experimental treatment (yes/no) | 10/0 |
| Current investigational treatment (yes/no) | 10/0 |
| Current prototype treatment (yes/no) | 10/0 |
| Current pre-clinical treatment (yes/no) | 10/0 |
| Current phase I treatment (yes/no) | 10/0 |
| Current phase II treatment (yes/no) | 10/0 |
| Current phase III treatment (yes/no) | 10/0 |
| Current phase IV treatment (yes/no) | 10/0 |
| Current phase V treatment (yes/no) | 10/0 |
| Current phase VI treatment (yes/no) | 10/0 |
| Current phase VII treatment (yes/no) | 10/0 |
| Current phase VIII treatment (yes/no) | 10/0 |
| Current phase IX treatment (yes/no) | 10/0 |
| Current phase X treatment (yes/no) | 10/0 |
| Current phase XI treatment (yes/no) | 10/0 |
| Current phase XII treatment (yes/no) | 10/0 |
| Current phase XIII treatment (yes/no) | 10/0 |
| Current phase XIV treatment (yes/no) | 10/0 |
| Current phase XV treatment (yes/no) | 10/0 |
| Current phase XVI treatment (yes/no) | 10/0 |
| Current phase XVII treatment (yes/no) | 10/0 |
| Current phase XVIII treatment (yes/no) | 10/0 |
| Current phase XIX treatment (yes/no) | 10/0 |
| Current phase XX treatment (yes/no) | 10/0 |
| Current phase XXI treatment (yes/no) | 10/0 |
| Current phase XXII treatment (yes/no) | 10/0 |
| Current phase XXIII treatment (yes/no) | 10/0 |
| Current phase XXIV treatment (yes/no) | 10/0 |
| Current phase XXV treatment (yes/no) | 10/0 |
| Current phase XXVI treatment (yes/no) | 10/0 |
| Current phase XXVII treatment (yes/no) | 10/0 |
| Current phase XXVIII treatment (yes/no) | 10/0 |
| Current phase XXIX treatment (yes/no) | 10/0 |
| Current phase XXX treatment (yes/no) | 10/0 |
| Current phase XXXI treatment (yes/no) | 10/0 |
| Current phase XXXII treatment (yes/no) | 10/0 |
| Current phase XXXIII treatment (yes/no) | 10/0 |
| Current phase XXXIV treatment (yes/no) | 10/0 |
| Current phase XXXV treatment (yes/no) | 10/0 |
| Current phase XXXVI treatment (yes/no) | 10/0 |
| Current phase XXXVII treatment (yes/no) | 10/0 |
| Current phase XXXVIII treatment (yes/no) | 10/0 |
| Current phase XXXIX treatment (yes/no) | 10/0 |
| Current phase XL treatment (yes/no) | 10/0 |
| Current phase XLI treatment (yes/no) | 10/0 |
| Current phase XLII treatment (yes/no) | 10/0 |
| Current phase XLIII treatment (yes/no) | 10/0 |
| Current phase XLIV treatment (yes/no) | 10/0 |
| Current phase XLV treatment (yes/no) | 10/0 |
| Current phase XLVI treatment (yes/no) | 10/0 |
| Current phase XLVII treatment (yes/no) | 10/0 |
| Current phase XLVIII treatment (yes/no) | 10/0 |
| Current phase XLIX treatment (yes/no) | 10/0 |
| Current phase L treatment (yes/no) | 10/0 |
| Current phase LI treatment (yes/no) | 10/0 |
| Current phase LII treatment (yes/no) | 10/ |

| | | | | | |
|------------|------------|------------|------------|------------|-----|
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| tgctgctagc | tgcttgggc | ctcacaattt | tcattctgtt | ttctgacttt | 100 |
| caagttatat | accgtggaat | ggagttgatc | ccaaccataa | catcgtggag | 150 |

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 aaaccttgca gcaagggacc ttagataggc ttattctgac tgtatgcttt 650
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 <211> 115
 <212> PRT
 <213> Homo sapiens

<400> 227
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 35 40 45
 Phe Gly Phe Tyr Ser Lys Ser Gln Tyr Arg Thr Trp Gln Lys Lys
 50 55 60
 Leu Ala Glu Asp Ser Thr Trp Pro Pro Ile Asn Arg Thr Asp Tyr
 65 70 75
 Ser Gly Asp Gly Lys Asn Gly Phe Tyr Ile Asn Gly Gly Tyr Glu
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 Pro Thr Glu Gln His Phe Trp Ala Arg Leu
 110 115

<210> 228
 <211> 2185
 <212> DNA
 <213> Homo sapiens

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 caggaaactc aaatatgact cccctcccc aaaaaactta taaaatgcaa 2050
 tagaatgcac acaaagacag caacttttgt acagagtggg gagagacttt 2100
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 <211> 653
 <212> PRT
 <213> Homo sapiens

<400> 229
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 Leu Cys Ala Ala Ile Ala Ala Ala Ala Ser Ala Gly Pro Gln Asn
 35 40 45
 Cys Pro Ser Val Cys Ser Cys Ser Asn Gln Phe Ser Lys Val Val
 50 55 60
 Cys Thr Arg Arg Gly Leu Ser Glu Val Pro Gln Gly Ile Pro Ser
 65 70 75
 Asn Thr Arg Tyr Leu Asn Leu Met Glu Asn Asn Ile Gln Met Ile
 80 85 90
 Gln Ala Asp Thr Phe Arg His Leu His His Leu Glu Val Leu Gln
 95 100 105
 Leu Gly Arg Asn Ser Ile Arg Gln Ile Glu Val Gly Ala Phe Asn
 110 115 120
 Gly Leu Ala Ser Leu Asn Thr Leu Glu Leu Phe Asp Asn Trp Leu
 125 130 135
 Thr Val Ile Pro Ser Gly Ala Phe Glu Tyr Leu Ser Lys Leu Arg
 140 145 150
 Glu Leu Trp Leu Arg Asn Asn Pro Ile Glu Ser Ile Pro Ser Tyr
 155 160 165
 Ala Phe Asn Arg Val Pro Ser Leu Met Arg Leu Asp Leu Gly Glu
 170 175 180
 Leu Lys Lys Leu Glu Tyr Ile Ser Glu Gly Ala Phe Glu Gly Leu

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| | | | | 185 | | | | | 190 | | | | | 195 |
| Phe | Asn | Leu | Lys | Tyr 200 | Leu | Asn | Leu | Gly | Met 205 | Cys | Asn | Ile | Lys | Asp 210 |
| Met | Pro | Asn | Leu | Thr 215 | Pro | Leu | Val | Gly | Leu 220 | Glu | Glu | Leu | Glu | Met 225 |
| Ser | Gly | Asn | His | Phe 230 | Pro | Glu | Ile | Arg | Pro 235 | Gly | Ser | Phe | His | Gly 240 |
| Leu | Ser | Ser | Leu | Lys 245 | Lys | Leu | Trp | Val | Met 250 | Asn | Ser | Gln | Val | Ser 255 |
| Leu | Ile | Glu | Arg | Asn 260 | Ala | Phe | Asp | Gly | Leu 265 | Ala | Ser | Leu | Val | Glu 270 |
| Leu | Asn | Leu | Ala | His 275 | Asn | Asn | Leu | Ser | Ser 280 | Leu | Pro | His | Asp | Leu 285 |
| Phe | Thr | Pro | Leu | Arg 290 | Tyr | Leu | Val | Glu | Leu 295 | His | Leu | His | His | Asn 300 |
| Pro | Trp | Asn | Cys | Asp 305 | Cys | Asp | Ile | Leu | Trp 310 | Leu | Ala | Trp | Trp | Leu 315 |
| Arg | Glu | Tyr | Ile | Pro 320 | Thr | Asn | Ser | Thr | Cys 325 | Cys | Gly | Arg | Cys | His 330 |
| Ala | Pro | Met | His | Met 335 | Arg | Gly | Arg | Tyr | Leu 340 | Val | Glu | Val | Asp | Gln 345 |
| Ala | Ser | Phe | Gln | Cys 350 | Ser | Ala | Pro | Phe | Ile 355 | Met | Asp | Ala | Pro | Arg 360 |
| Asp | Leu | Asn | Ile | Ser 365 | Glu | Gly | Arg | Met | Ala 370 | Glu | Leu | Lys | Cys | Arg 375 |
| Thr | Pro | Pro | Met | Ser 380 | Ser | Val | Lys | Trp | Leu 385 | Leu | Pro | Asn | Gly | Thr 390 |
| Val | Leu | Ser | His | Ala 395 | Ser | Arg | His | Pro | Arg 400 | Ile | Ser | Val | Leu | Asn 405 |
| Asp | Gly | Thr | Leu | Asn 410 | Phe | Ser | His | Val | Leu 415 | Leu | Ser | Asp | Thr | Gly 420 |
| Val | Tyr | Thr | Cys | Met 425 | Val | Thr | Asn | Val | Ala 430 | Gly | Asn | Ser | Asn | Ala 435 |
| Ser | Ala | Tyr | Leu | Asn 440 | Val | Ser | Thr | Ala | Glu 445 | Leu | Asn | Thr | Ser | Asn 450 |
| Tyr | Ser | Phe | Phe | Thr 455 | Thr | Val | Thr | Val | Glu 460 | Thr | Thr | Glu | Ile | Ser 465 |
| Pro | Glu | Asp | Thr | Thr 470 | Arg | Lys | Tyr | Lys | Pro 475 | Val | Pro | Thr | Thr | Ser 480 |
| Thr | Gly | Tyr | Gln | Pro 485 | Ala | Tyr | Thr | Thr | Ser 490 | Thr | Thr | Val | Leu | Ile 495 |
| Gln | Thr | Thr | Arg | Val | Pro | Lys | Gln | Val | Ala | Val | Pro | Ala | Thr | Asp |

| 500 | | | | | | | | | | 505 | | | | | 510 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Thr | Thr | Asp | Lys | Met | Gln | Thr | Ser | Leu | Asp | Glu | Val | Met | Lys | Thr | | | | | |
| | | | | 515 | | | | | 520 | | | | | 525 | | | | | |
| Thr | Lys | Ile | Ile | Ile | Gly | Cys | Phe | Val | Ala | Val | Thr | Leu | Leu | Ala | | | | | |
| | | | | 530 | | | | | 535 | | | | | 540 | | | | | |
| Ala | Ala | Met | Leu | Ile | Val | Phe | Tyr | Lys | Leu | Arg | Lys | Arg | His | Gln | | | | | |
| | | | | 545 | | | | | 550 | | | | | 555 | | | | | |
| Gln | Arg | Ser | Thr | Val | Thr | Ala | Ala | Arg | Thr | Val | Glu | Ile | Ile | Gln | | | | | |
| | | | | 560 | | | | | 565 | | | | | 570 | | | | | |
| Val | Asp | Glu | Asp | Ile | Pro | Ala | Ala | Thr | Ser | Ala | Ala | Ala | Thr | Ala | | | | | |
| | | | | 575 | | | | | 580 | | | | | 585 | | | | | |
| Ala | Pro | Ser | Gly | Val | Ser | Gly | Glu | Gly | Ala | Val | Val | Leu | Pro | Thr | | | | | |
| | | | | 590 | | | | | 595 | | | | | 600 | | | | | |
| Ile | His | Asp | His | Ile | Asn | Tyr | Asn | Thr | Tyr | Lys | Pro | Ala | His | Gly | | | | | |
| | | | | 605 | | | | | 610 | | | | | 615 | | | | | |
| Ala | His | Trp | Thr | Glu | Asn | Ser | Leu | Gly | Asn | Ser | Leu | His | Pro | Thr | | | | | |
| | | | | 620 | | | | | 625 | | | | | 630 | | | | | |
| Val | Thr | Thr | Ile | Ser | Glu | Pro | Tyr | Ile | Ile | Gln | Thr | His | Thr | Lys | | | | | |
| | | | | 635 | | | | | 640 | | | | | 645 | | | | | |
| Asp | Lys | Val | Gln | Glu | Thr | Gln | Ile | | | | | | | | | | | | |
| | | | | 650 | | | | | | | | | | | | | | | |

<210> 230
 <211> 2846
 <212> DNA
 <213> Homo sapiens

<400> 230
 cgctcgggca ccagccgcgg caaggatgga gctgggttgc tggacgcagt 50
 tggggctcac ttttcttcag ctcttctca tctcgtcctt gccaagagag 100
 tacacagtca ttaatgaagc ctgccctgga gcagagtgga atatcatgtg 150
 tcgggagtgc tgtgaatatg atcagattga gtgcgtctgc cccgaaaga 200
 gggaagtcgt gggttatacc atcccttgct gcaggaatga ggagaatgag 250
 tgtgactcct gcctgatcca ccaggttgt accatctttg aaaactgcaa 300
 gagctgccga aatggctcat gggggggtac cttggatgac ttctatgtga 350
 aggggttcta ctgtgcagag tgccgagcag gctggtacgg aggagactgc 400
 atgcgatgtg gccaggttct gcgagcccca aagggtcaga ttttgttgga 450
 aagctatccc ctaaagtctc actgtgaatg gaccattcat gctaaacctg 500
 ggtttgtcat ccaactaaga tttgtcatgt tgagtctgga gtttgactac 550
 atgtgccagt atgactatgt tgaggttcgt gatggagaca accgcgatgg 600
 ccagatcatc aagcgtgtct gtggcaacga gcggccagct cctatccaga 650

tgaagcagtg tgggcctgaa gtgtgatttg gcctgtgaac ttggctgtgc 2300
cagggcttct gacttcaggg acaaaactca gtgaagggtg agtagacctc 2350
cattgctggt aggctgatgc cgcgtccact actaggacag ccaattggaa 2400
gatgccaggg cttgcaagaa gtaagtttct tcaaagaaga ccatatacaa 2450
aacctctcca ctccactgac ctgggtgtct tccccaactt tcagttatac 2500
gaatgccatc agcttgacca gggaagatct gggcttcacg agggcccttt 2550
tgaggctctc aagttctaga gagctgcctg tgggacagcc cagggcagca 2600
gagctgggat gtggtgcatg cctttgtgta catggccaca gtacagtctg 2650
gtccttttcc ttccccatct cttgtacaca ttttaataaa ataagggttg 2700
gcttctgaac tacaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2750
aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2800
aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa 2846

<210> 231
<211> 720
<212> PRT
<213> Homo sapiens

<400> 231
Met Glu Leu Gly Cys Trp Thr Gln Leu Gly Leu Thr Phe Leu Gln
1 5 10 15
Leu Leu Leu Ile Ser Ser Leu Pro Arg Glu Tyr Thr Val Ile Asn
20 25 30
Glu Ala Cys Pro Gly Ala Glu Trp Asn Ile Met Cys Arg Glu Cys
35 40 45
Cys Glu Tyr Asp Gln Ile Glu Cys Val Cys Pro Gly Lys Arg Glu
50 55 60
Val Val Gly Tyr Thr Ile Pro Cys Cys Arg Asn Glu Glu Asn Glu
65 70 75
Cys Asp Ser Cys Leu Ile His Pro Gly Cys Thr Ile Phe Glu Asn
80 85 90
Cys Lys Ser Cys Arg Asn Gly Ser Trp Gly Gly Thr Leu Asp Asp
95 100 105
Phe Tyr Val Lys Gly Phe Tyr Cys Ala Glu Cys Arg Ala Gly Trp
110 115 120
Tyr Gly Gly Asp Cys Met Arg Cys Gly Gln Val Leu Arg Ala Pro
125 130 135
Lys Gly Gln Ile Leu Leu Glu Ser Tyr Pro Leu Asn Ala His Cys
140 145 150
Glu Trp Thr Ile His Ala Lys Pro Gly Phe Val Ile Gln Leu Arg
155 160 165

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Lys | Gly | Ala | Trp | Phe | Leu | Val | Cys | Ser | Gly | Ala | Leu | Val | Asn |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Glu | Arg | Thr | Val | Val | Val | Ala | Ala | His | Cys | Val | Thr | Asp | Leu | Gly |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Lys | Val | Thr | Met | Ile | Lys | Thr | Ala | Asp | Leu | Lys | Val | Val | Leu | Gly |
| | | | | 515 | | | | | 520 | | | | | 525 |
| Lys | Phe | Tyr | Arg | Asp | Asp | Asp | Arg | Asp | Glu | Lys | Thr | Ile | Gln | Ser |
| | | | | 530 | | | | | 535 | | | | | 540 |
| Leu | Gln | Ile | Ser | Ala | Ile | Ile | Leu | His | Pro | Asn | Tyr | Asp | Pro | Ile |
| | | | | 545 | | | | | 550 | | | | | 555 |
| Leu | Leu | Asp | Ala | Asp | Ile | Ala | Ile | Leu | Lys | Leu | Leu | Asp | Lys | Ala |
| | | | | 560 | | | | | 565 | | | | | 570 |
| Arg | Ile | Ser | Thr | Arg | Val | Gln | Pro | Ile | Cys | Leu | Ala | Ala | Ser | Arg |
| | | | | 575 | | | | | 580 | | | | | 585 |
| Asp | Leu | Ser | Thr | Ser | Phe | Gln | Glu | Ser | His | Ile | Thr | Val | Ala | Gly |
| | | | | 590 | | | | | 595 | | | | | 600 |
| Trp | Asn | Val | Leu | Ala | Asp | Val | Arg | Ser | Pro | Gly | Phe | Lys | Asn | Asp |
| | | | | 605 | | | | | 610 | | | | | 615 |
| Thr | Leu | Arg | Ser | Gly | Val | Val | Ser | Val | Val | Asp | Ser | Leu | Leu | Cys |
| | | | | 620 | | | | | 625 | | | | | 630 |
| Glu | Glu | Gln | His | Glu | Asp | His | Gly | Ile | Pro | Val | Ser | Val | Thr | Asp |
| | | | | 635 | | | | | 640 | | | | | 645 |
| Asn | Met | Phe | Cys | Ala | Ser | Trp | Glu | Pro | Thr | Ala | Pro | Ser | Asp | Ile |
| | | | | 650 | | | | | 655 | | | | | 660 |
| Cys | Thr | Ala | Glu | Thr | Gly | Gly | Ile | Ala | Ala | Val | Ser | Phe | Pro | Gly |
| | | | | 665 | | | | | 670 | | | | | 675 |
| Arg | Ala | Ser | Pro | Glu | Pro | Arg | Trp | His | Leu | Met | Gly | Leu | Val | Ser |
| | | | | 680 | | | | | 685 | | | | | 690 |
| Trp | Ser | Tyr | Asp | Lys | Thr | Cys | Ser | His | Arg | Leu | Ser | Thr | Ala | Phe |
| | | | | 695 | | | | | 700 | | | | | 705 |
| Thr | Lys | Val | Leu | Pro | Phe | Lys | Asp | Trp | Ile | Glu | Arg | Asn | Met | Lys |
| | | | | 710 | | | | | 715 | | | | | 720 |

<210> 232

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 232

aggttcgtga tggagacaac cgcg 24

<210> 233

<211> 24

<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 233
tgtcaaggac gcactgccgt catg 24

<210> 234
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 234
tggccagatc atcaagcgtg tctgtggcaa cgagcggcca gctcctatcc 50

<210> 235
<211> 1964
<212> DNA
<213> Homo sapiens

<400> 235
accaggcatt gtatcttcag ttgtcatcaa gttcgcaatc agattggaaa 50
agctcaactt gaagctttct tgcctgcagt gaagcagaga gatagatatt 100
attcacgtaa taaaaaacat gggcttcaac ctgactttcc acctttccta 150
caaattccga ttactgttgc tgttgacttt gtgcctgaca gtggttgggt 200
gggccaccag taactacttc gtgggtgccca ttcaagagat tcctaaagca 250
aaggagttca tggctaattt ccataagacc ctcatTTtTg ggaagggaaa 300
aactctgact aatgaagcat ccacgaagaa ggtagaactt gacaactgtc 350
cttctgtgtc tccttacctc agaggccaga gcaagctcat tttcaaacca 400
gatctcactt tggaagaggt acaggcagaa aatcccaaag tgtccagagg 450
ccggtatcgc cctcaggaat gtaaagcttt acagagggtc gccatcctcg 500
ttccccaccg gaacagagag aaacacctga tgtacctgct ggaacatctg 550
catcccttcc tgcagaggca gcagctggat tatggcatct acgtcatcca 600
ccaggctgaa ggtaaaaagt ttaatcgagc caaactcttg aatgtgggct 650
atctagaagc cctcaaggaa gaaaattggg actgctttat attccacgat 700
gtggacctgg taccogagaa tgactttaac ctttacaagt gtgaggagca 750
tccaagcat ctggtggttg gcaggaacag cactgggtac aggttacgtt 800
acagtggata ttttgggggt gttactgccc taagcagaga gcagtttttc 850
aagggtgaatg gattctctaa caactactgg ggatggggag gcgaagacga 900
tgacctcaga ctcagggttg agctccaaag aatgaaaatt tccgggcccc 950
tgctgaagt gggtaaatat acaatggtct tccacactag agacaaaggc 1000

Pro Leu Tyr Ile Asn Ile Thr Val Asp Phe Trp Phe Gly Ala
 335 340

<210> 237
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 237
 ccttacctca gaggccagag caagc 25

<210> 238
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 238
 gagcttcacg cgttctgcgt tcacc 25

<210> 239
 <211> 46
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 239
 caggaatgta aagctttaca gagggtcgcc atcctcggtc cccacc 46

<210> 240
 <211> 2567
 <212> DNA
 <213> Homo sapiens

<400> 240
 cgtgggccgg ggtcgcgag cgggctgtgg gcgcgccgg aggagcgacc 50
 gccgcagttc tcgagctcca gctgcattcc ctccgcgtcc gcccacgct 100
 tctcccgctc cgggccccgc aatggccag gcagtgtggt cgcgcctcgg 150
 ccgcaccttc tggcttgctt gcctcctgcc ctgggccccg gcaggggtgg 200
 ccgcaggcct gtatgaactc aatctcacca ccgatagccc tgccaccacg 250
 ggagcggtgg tgaccatctc ggccagcctg gtggccaagg acaacggcag 300
 cctggccctg ccgcgtgacg cccacctcta ccgcttcac tgcatccaca 350
 ccccgctggt gcttactggc aagatggaga aggtctcag ctccaccatc 400
 cgtgtggtcg gccacgtgcc cggggaattc ccggtctctg tctgggtcac 450
 tgccgctgac tgctggatgt gccagcctgt ggccaggggc tttgtggtcc 500
 tcccatcac agagttcctc gtgggggacc ttgtgtcac ccagaacact 550

tccctaccct ggcccagctc ctatctcact aagaccgtcc tgaaagtctc 600
 ctctctctc caccgaccca gcaacttcct caagaccgcc ttgtttctct 650
 acagctggga cttcgggggac gggacccaga tggtgactga agactccgtg 700
 gtctattata actattccat catcgggacc ttcaccgtga agctcaaagt 750
 ggtggcgagg tgggaagagg tggagccgga tgccacgagg gctgtgaagc 800
 agaagaccgg ggacttctcc gcctcgctga agctgcagga aacccttcga 850
 ggcatccaag tgttggggcc caccctaatt cagaccttcc aaaagatgac 900
 cgtgacctg aacttctg ggagccctcc tctgactgtg tgctggcgtc 950
 tcaagcctga gtgcctccc ctggaggaag gggagtgcc cctgtgtcc 1000
 gtggccagca cagcgtacaa cctgaccac accttcaggg accctgggga 1050
 ctactgcttc agcatccggg ccgagaatat catcagcaag acacatcagt 1100
 accacaagat ccagggtgtg ccctccagaa tccagccggc tgtctttgt 1150
 ttcccatgtg ctacacttat cactgtgatg ttggccttca tcatgtacat 1200
 gaccctgagg aatgccactc agcaaaagga catggtggag aaccgggagc 1250
 caccctctgg ggtcagggtc tgctgccaga tgtgctgtgg gcctttcttg 1300
 ctggagactc catctgagta cctggaaatt gttcgtgaga accacgggct 1350
 gctcccgccc ctctataagt ctgtcaaac ttacaccgtg tgagcactcc 1400
 cctcccccac cccatctcag tgttaactga ctgctgactt ggagtttcca 1450
 gcagggtggt gtgcaccact gaccaggagg ggttcatttg cgtggggctg 1500
 ttggcctgga tcatccatcc atctgtacag ttcagccact gccacaagcc 1550
 cctccctctc tgtcaccct gacccagcc attcaccat ctgtacagtc 1600
 cagccactga cataagcccc actcggttac cacccttg accccctacc 1650
 tttgaagagg ctctgtcag gactttgatg cttgggggtg tccgtgttga 1700
 ctctagggtg ggctggctg cccactgcc attcctctca tattggcaca 1750
 tctgctgtcc attgggggtt ctcagtttcc tccccagac agccctacct 1800
 gtgccagaga gctagaaaga aggtcataaa gggtaaaaa tccataacta 1850
 aaggttgtac acatagatgg gcacactcac agagagaagt gtgcatgtac 1900
 acacaccaca cacacacaca cacacacaca cacagaaata taaacacatg 1950
 cgtcacatgg gcatttcaga tgatcagctc tgtatctggt taagtcggtt 2000
 gctgggatgc accctgcaat agagctgaaa ggaaatttga cctccaagca 2050
 gccctgacag gttctgggccc cgggccctcc ctttgtgctt tgtctctgca 2100
 gttcttgogc cctttataag gccatcctag tccctgctgg ctggcagggg 2150

cctggatggg gggcaggact aatactgagt gattgcagag tgctttataa 2200
 atatcacctt attttatcga aacccatctg tgaaactttc actgaggaaa 2250
 aggccottgca gcggtagaag aggttgagtc aaggccgggc gcggtggctc 2300
 acgcctgtaa tcccagcact ttgggaggcc gaggcgggtg gatcacgaga 2350
 tcaggagatc gagaccacc tggctaacac ggtgaaaccc cgtctctact 2400
 aaaaaaatac aaaaagttag ccgggcgtgg tgggtgggtgc ctgtagtccc 2450
 agctactcgg gaggtctgagg caggagaatg gtgcgaaccc gggaggcgga 2500
 gcttgcaagt agcccagatg gcgccactgc actccagcct gagtgacaga 2550
 gcgagactct gtctcca 2567

<210> 241
 <211> 423
 <212> PRT
 <213> Homo sapiens

<400> 241
 Met Ala Gln Ala Val Trp Ser Arg Leu Gly Arg Ile Leu Trp Leu
 1 5 10 15
 Ala Cys Leu Leu Pro Trp Ala Pro Ala Gly Val Ala Ala Gly Leu
 20 25 30
 Tyr Glu Leu Asn Leu Thr Thr Asp Ser Pro Ala Thr Thr Gly Ala
 35 40 45
 Val Val Thr Ile Ser Ala Ser Leu Val Ala Lys Asp Asn Gly Ser
 50 55 60
 Leu Ala Leu Pro Ala Asp Ala His Leu Tyr Arg Phe His Trp Ile
 65 70 75
 His Thr Pro Leu Val Leu Thr Gly Lys Met Glu Lys Gly Leu Ser
 80 85 90
 Ser Thr Ile Arg Val Val Gly His Val Pro Gly Glu Phe Pro Val
 95 100 105
 Ser Val Trp Val Thr Ala Ala Asp Cys Trp Met Cys Gln Pro Val
 110 115 120
 Ala Arg Gly Phe Val Val Leu Pro Ile Thr Glu Phe Leu Val Gly
 125 130 135
 Asp Leu Val Val Thr Gln Asn Thr Ser Leu Pro Trp Pro Ser Ser
 140 145 150
 Tyr Leu Thr Lys Thr Val Leu Lys Val Ser Phe Leu Leu His Asp
 155 160 165
 Pro Ser Asn Phe Leu Lys Thr Ala Leu Phe Leu Tyr Ser Trp Asp
 170 175 180
 Phe Gly Asp Gly Thr Gln Met Val Thr Glu Asp Ser Val Val Tyr
 185 190 195

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Asn | Tyr | Ser | Ile | Ile | Gly | Thr | Phe | Thr | Val | Lys | Leu | Lys | Val |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Val | Ala | Glu | Trp | Glu | Glu | Val | Glu | Pro | Asp | Ala | Thr | Arg | Ala | Val |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Lys | Gln | Lys | Thr | Gly | Asp | Phe | Ser | Ala | Ser | Leu | Lys | Leu | Gln | Glu |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Thr | Leu | Arg | Gly | Ile | Gln | Val | Leu | Gly | Pro | Thr | Leu | Ile | Gln | Thr |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Phe | Gln | Lys | Met | Thr | Val | Thr | Leu | Asn | Phe | Leu | Gly | Ser | Pro | Pro |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Leu | Thr | Val | Cys | Trp | Arg | Leu | Lys | Pro | Glu | Cys | Leu | Pro | Leu | Glu |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Glu | Gly | Glu | Cys | His | Pro | Val | Ser | Val | Ala | Ser | Thr | Ala | Tyr | Asn |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Leu | Thr | His | Thr | Phe | Arg | Asp | Pro | Gly | Asp | Tyr | Cys | Phe | Ser | Ile |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Arg | Ala | Glu | Asn | Ile | Ile | Ser | Lys | Thr | His | Gln | Tyr | His | Lys | Ile |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Gln | Val | Trp | Pro | Ser | Arg | Ile | Gln | Pro | Ala | Val | Phe | Ala | Phe | Pro |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Cys | Ala | Thr | Leu | Ile | Thr | Val | Met | Leu | Ala | Phe | Ile | Met | Tyr | Met |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Thr | Leu | Arg | Asn | Ala | Thr | Gln | Gln | Lys | Asp | Met | Val | Glu | Asn | Pro |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Glu | Pro | Pro | Ser | Gly | Val | Arg | Cys | Cys | Cys | Gln | Met | Cys | Cys | Gly |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Pro | Phe | Leu | Leu | Glu | Thr | Pro | Ser | Glu | Tyr | Leu | Glu | Ile | Val | Arg |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Glu | Asn | His | Gly | Leu | Leu | Pro | Pro | Leu | Tyr | Lys | Ser | Val | Lys | Thr |
| | | | | 410 | | | | | 415 | | | | | 420 |

Tyr Thr Val

<210> 242

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 242

catttcctta ccctggaccc agctcc 26

<210> 243

<211> 25

<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 243
gaaaggccca cagcacatct ggcag 25

<210> 244
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 244
ccacgaccg agcaacttcc tcaagaccga cttgtttctc tacagc 46

<210> 245
<211> 485
<212> DNA
<213> Homo sapiens

<400> 245
gctcaagacc cagcagtggg acagccagac agacggcacg atggcactga 50
gctcccagat ctgggccgct tgctctctgc tcctcctcct cctcgccagc 100
ctgaccagtg gctctgtttt ccacaacag acgggacaac ttgcagagct 150
gcaacccag gacagagctg gagccagggc cagctggatg cccatgttcc 200
agaggcgaag gaggcgagac acccacttcc ccatctgcat tttctgctgc 250
ggctgctgtc atcgatcaaa gtgtgggatg tgctgcaaga cgtagaacct 300
acctgccctg ccccgctccc ctcccttctt tatttattcc tgctgccccca 350
gaacataggt cttggaataa aatggctggt tcttttgttt tccaaaaaaaa 400
aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 450
aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa 485

<210> 246
<211> 84
<212> PRT
<213> Homo sapiens

<400> 246
Met Ala Leu Ser Ser Gln Ile Trp Ala Ala Cys Leu Leu Leu Leu
1 5 10 15
Leu Leu Leu Ala Ser Leu Thr Ser Gly Ser Val Phe Pro Gln Gln
20 25 30
Thr Gly Gln Leu Ala Glu Leu Gln Pro Gln Asp Arg Ala Gly Ala
35 40 45
Arg Ala Ser Trp Met Pro Met Phe Gln Arg Arg Arg Arg Arg Asp
50 55 60
Thr His Phe Pro Ile Cys Ile Phe Cys Cys Gly Cys Cys His Arg
65 70 75

Ser Lys Cys Gly Met Cys Cys Lys Thr
80

<210> 247
<211> 2359
<212> DNA
<213> Homo sapiens

<400> 247
ctgtcaggaa ggaccatctg aaggctgcaa tttgttctta gggaggcagg 50
tgctggcctg gcctggatct tccaccatgt tcctgttgct gccttttgat 100
agcctgattg tcaaccttct gggcatctcc ctgactgtcc tcttcaccct 150
ccttctogtt ttcacatag tgccagccat ttttgagtc tcctttggta 200
tccgcaaact ctacatgaaa agtctgttaa aaatctttgc gtgggctacc 250
ttgagaatgg agcgaggagc caaggagaag aaccaccagc tttaacaagcc 300
ctacaccaac ggaatcattg caaaggatcc cacttacta gaagaagaga 350
tcaaagagat togtogaagt ggtagtagta aggctctgga caaactcca 400
gagttcgagc tototgacat tttctacttt tgccggaaag gaatggagac 450
cattatggat gatgaggatg caaagagatt ctgagcagaa gaactggagt 500
cctggaacct gctgagcaga accaattata acttcagta catcagcctt 550
cggctcacgg tcctgtgggg gttaggagtg ctgattcggg actgctttct 600
gctgccgctc aggatagcac tggctttcac agggattagc cttctggtgg 650
tgggcacaac tgtggtggga tacttgccaa atgggaggtt taaggaattc 700
atgagtaaac atgttcaactt aatgtgttac cggatctgcg tgcgagcgct 750
gacagccatc atcacctacc atgacagga aaacagacca agaaatggtg 800
gcatctgtgt ggccaatcat acctaccga tcgatgtgat catcttggcc 850
agcgatggct attatgccat ggtgggtcaa gtgcacgggg gactcatggg 900
tgtgattcag agagccatgg tgaaggcctg cccacacgtc tggtttgagc 950
gctcggaagt gaaggatcgc cacctggtgg ctaagagact gactgaacat 1000
gtgcaagata aaagcaagct gctatcctc atcttcccag aaggaacctg 1050
catcaataat acatcgggtg tgatgttcaa aaagggaagt tttgaaattg 1100
gagccacagt ttaccctgtt gctatcaagt atgaccctca atttggcgat 1150
gccttctgga acagcagcaa atacgggatg gtgacgtacc tgctgcgaat 1200
gatgaccagc tgggccattg tctgcagcgt gtggtacctg cctcccatga 1250
ctagagagggc agatgaagat gctgtocagt ttgcgaatag ggtgaaatct 1300
gccattgcc a ggcagggagg acttgtggac ctgctgtggg atgggggcct 1350

gaagagggag aaggtgaagg acacgttcaa ggaggagcag cagaagctgt 1400
acagcaagat gatcgtgggg aaccacaagg acaggagccg ctcttgagcc 1450
tgctccagc tggctggggc caccgtgcgg ggtgccaaac ggctcagagc 1500
tggagttgcc gccgccgccc cactgtctgt gtcctttcca gactccaggg 1550
ctccccgggc tgctctggat ccagggactc cggctttcgc cgagccgcag 1600
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gctgctgggt gttgcgaccc aggacgagat gccttgtttc tttacaata 1700
agtcgttga ggaatgccat taaagtgaac tccccacctt tgcacgctgt 1750
gcgggctgag tggttgggga gatgtggcca tggctctgtg ctagagatgg 1800
cggtaacaaga gtctgttatg caagcccgtg tgccagggat gtgctggggg 1850
cggccacccg ctctccagga aaggcacagc tgaggcactg tggctggctt 1900
cggcctcaac atcgccccc gccctggagc tctgcagaca tgataggaag 1950
gaaactgtca tctgcagggg ctttcagcaa aatgaagggt tagattttta 2000
tgctgctgct gatgggggta ctaaaggag gggaaggagc cagggtgggc 2050
gctgactggg ccatggggag aacgtgtgtt cgtactccag gctaaccctg 2100
aactcccat gtgatgcgcg ctttggtgaa tgtgtgtctc ggtttcccca 2150
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gttggtgggga ttaaagtgtc gcgggtgagt gaaggacaca tcacgttcag 2250
tgtttcaagt acaggcccac aaaacggggc acggcaggcc tgagctcaga 2300
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<210> 248

<211> 456

<212> PRT

<213> Homo sapiens

<400> 248

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Phe | Leu | Leu | Leu | Pro | Phe | Asp | Ser | Leu | Ile | Val | Asn | Leu | Leu |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |
| Gly | Ile | Ser | Leu | Thr | Val | Leu | Phe | Thr | Leu | Leu | Leu | Val | Phe | Ile |
| | | | | 20 | | | | | 25 | | | | 30 | |
| Ile | Val | Pro | Ala | Ile | Phe | Gly | Val | Ser | Phe | Gly | Ile | Arg | Lys | Leu |
| | | | | 35 | | | | | 40 | | | | 45 | |
| Tyr | Met | Lys | Ser | Leu | Leu | Lys | Ile | Phe | Ala | Trp | Ala | Thr | Leu | Arg |
| | | | | 50 | | | | | 55 | | | | 60 | |
| Met | Glu | Arg | Gly | Ala | Lys | Glu | Lys | Asn | His | Gln | Leu | Tyr | Lys | Pro |
| | | | | 65 | | | | | 70 | | | | 75 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Thr | Asn | Gly | Ile | Ile | Ala | Lys | Asp | Pro | Thr | Ser | Leu | Glu | Glu | 80 | 85 | 90 |
| Glu | Ile | Lys | Glu | Ile | Arg | Arg | Ser | Gly | Ser | Ser | Lys | Ala | Leu | Asp | 95 | 100 | 105 |
| Asn | Thr | Pro | Glu | Phe | Glu | Leu | Ser | Asp | Ile | Phe | Tyr | Phe | Cys | Arg | 110 | 115 | 120 |
| Lys | Gly | Met | Glu | Thr | Ile | Met | Asp | Asp | Glu | Val | Thr | Lys | Arg | Phe | 125 | 130 | 135 |
| Ser | Ala | Glu | Glu | Leu | Glu | Ser | Trp | Asn | Leu | Leu | Ser | Arg | Thr | Asn | 140 | 145 | 150 |
| Tyr | Asn | Phe | Gln | Tyr | Ile | Ser | Leu | Arg | Leu | Thr | Val | Leu | Trp | Gly | 155 | 160 | 165 |
| Leu | Gly | Val | Leu | Ile | Arg | Tyr | Cys | Phe | Leu | Leu | Pro | Leu | Arg | Ile | 170 | 175 | 180 |
| Ala | Leu | Ala | Phe | Thr | Gly | Ile | Ser | Leu | Leu | Val | Val | Gly | Thr | Thr | 185 | 190 | 195 |
| Val | Val | Gly | Tyr | Leu | Pro | Asn | Gly | Arg | Phe | Lys | Glu | Phe | Met | Ser | 200 | 205 | 210 |
| Lys | His | Val | His | Leu | Met | Cys | Tyr | Arg | Ile | Cys | Val | Arg | Ala | Leu | 215 | 220 | 225 |
| Thr | Ala | Ile | Ile | Thr | Tyr | His | Asp | Arg | Glu | Asn | Arg | Pro | Arg | Asn | 230 | 235 | 240 |
| Gly | Gly | Ile | Cys | Val | Ala | Asn | His | Thr | Ser | Pro | Ile | Asp | Val | Ile | 245 | 250 | 255 |
| Ile | Leu | Ala | Ser | Asp | Gly | Tyr | Tyr | Ala | Met | Val | Gly | Gln | Val | His | 260 | 265 | 270 |
| Gly | Gly | Leu | Met | Gly | Val | Ile | Gln | Arg | Ala | Met | Val | Lys | Ala | Cys | 275 | 280 | 285 |
| Pro | His | Val | Trp | Phe | Glu | Arg | Ser | Glu | Val | Lys | Asp | Arg | His | Leu | 290 | 295 | 300 |
| Val | Ala | Lys | Arg | Leu | Thr | Glu | His | Val | Gln | Asp | Lys | Ser | Lys | Leu | 305 | 310 | 315 |
| Pro | Ile | Leu | Ile | Phe | Pro | Glu | Gly | Thr | Cys | Ile | Asn | Asn | Thr | Ser | 320 | 325 | 330 |
| Val | Met | Met | Phe | Lys | Lys | Gly | Ser | Phe | Glu | Ile | Gly | Ala | Thr | Val | 335 | 340 | 345 |
| Tyr | Pro | Val | Ala | Ile | Lys | Tyr | Asp | Pro | Gln | Phe | Gly | Asp | Ala | Phe | 350 | 355 | 360 |
| Trp | Asn | Ser | Ser | Lys | Tyr | Gly | Met | Val | Thr | Tyr | Leu | Leu | Arg | Met | 365 | 370 | 375 |
| Met | Thr | Ser | Trp | Ala | Ile | Val | Cys | Ser | Val | Trp | Tyr | Leu | Pro | Pro | 380 | 385 | 390 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Thr | Arg | Glu | Ala | Asp | Glu | Asp | Ala | Val | Gln | Phe | Ala | Asn | Arg | 395 | 400 | 405 |
| Val | Lys | Ser | Ala | Ile | Ala | Arg | Gln | Gly | Gly | Leu | Val | Asp | Leu | Leu | 410 | 415 | 420 |
| Trp | Asp | Gly | Gly | Leu | Lys | Arg | Glu | Lys | Val | Lys | Asp | Thr | Phe | Lys | 425 | 430 | 435 |
| Glu | Glu | Gln | Gln | Lys | Leu | Tyr | Ser | Lys | Met | Ile | Val | Gly | Asn | His | 440 | 445 | 450 |
| Lys | Asp | Arg | Ser | Arg | Ser | | | | | | | | | | 455 | | |

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 <211> 1103
 <212> DNA
 <213> Homo sapiens

<400> 249
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 gccctcgga gcctcggcct ccacacctgg caggcccagg ctgttccac 150
 catcctgccc ctgggcctgg ctccagacac ctttgacgat acctatgtgg 200
 gttgtgcaga ggagatggag gagaaggcag cccccctgct aaaggaggaa 250
 atggcccacc atgccctgct gcggaatcc tgggaggcag ccaggagac 300
 ctgggaggac aagcgctgag ggcttacctt gccccctggc ttcaaagccc 350
 agaatggaat agccattatg gtctacacca actcatcgaa caccttgtac 400
 tgggagttga atcaggcctg gcggacgggc ggaggctccc ggagctcta 450
 catgaggcac ttcccttca aggccctgca tttctacctg atccgggccc 500
 tgcagctgct gcgaggcagt gggggctgca gcaggggacc tggggagggtg 550
 gtgttccgag gtgtgggcag ccttcgcttt gaaccaaga ggctggggga 600
 ctctgtccgc ttgggccagt ttgcctccag ctccctggat aaggcagtgg 650
 cccacagatt tggggagaag aggcggggct gtgtgtctgc gccaggggtg 700
 cagctagggt cacaatctga gggggcctcc tctctgcccc cctggaagac 750
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 acgaagaggc acctccagca gccttgagaa gcaagaacat gggtccggac 900
 ccagccctag cagccttctc cccaaccagg atgttggcct ggggaggcca 950
 cagcagggtg gagggaaactc tgctatgtga tggggacttc ctgggacaag 1000
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gacatggagt tttattgagg tagctacgtg attaaatggt attgcagtgt 1100

gga 1103

<210> 250

<211> 240

<212> PRT

<213> Homo sapiens

<400> 250

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Leu | Ala | Ala | Leu | Met | Ile | Ala | Leu | Gly | Ser | Leu | Gly | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Thr | Trp | Gln | Ala | Gln | Ala | Val | Pro | Thr | Ile | Leu | Pro | Leu | Gly |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ala | Pro | Asp | Thr | Phe | Asp | Asp | Thr | Tyr | Val | Gly | Cys | Ala | Glu |
| | | | 35 | | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Met | Glu | Glu | Lys | Ala | Ala | Pro | Leu | Leu | Lys | Glu | Glu | Met | Ala |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | His | Ala | Leu | Leu | Arg | Glu | Ser | Trp | Glu | Ala | Ala | Gln | Glu | Thr |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Glu | Asp | Lys | Arg | Arg | Gly | Leu | Thr | Leu | Pro | Pro | Gly | Phe | Lys |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Gln | Asn | Gly | Ile | Ala | Ile | Met | Val | Tyr | Thr | Asn | Ser | Ser | Asn |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Leu | Tyr | Trp | Glu | Leu | Asn | Gln | Ala | Val | Arg | Thr | Gly | Gly | Gly |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Arg | Glu | Leu | Tyr | Met | Arg | His | Phe | Pro | Phe | Lys | Ala | Leu | His |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Tyr | Leu | Ile | Arg | Ala | Leu | Gln | Leu | Leu | Arg | Gly | Ser | Gly | Gly |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Ser | Arg | Gly | Pro | Gly | Glu | Val | Val | Phe | Arg | Gly | Val | Gly | Ser |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Arg | Phe | Glu | Pro | Lys | Arg | Leu | Gly | Asp | Ser | Val | Arg | Leu | Gly |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Phe | Ala | Ser | Ser | Ser | Leu | Asp | Lys | Ala | Val | Ala | His | Arg | Phe |
| | | | | 185 | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Glu | Lys | Arg | Arg | Gly | Cys | Val | Ser | Ala | Pro | Gly | Val | Gln | Leu |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ser | Gln | Ser | Glu | Gly | Ala | Ser | Ser | Leu | Pro | Pro | Trp | Lys | Thr |
| | | | | 215 | | | | | 220 | | | | | 225 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Leu | Ala | Pro | Gly | Glu | Phe | Gln | Leu | Ser | Gly | Val | Gly | Pro |
| | | | | 230 | | | | | 235 | | | | | 240 |

<210> 251

<211> 50

<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 251
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<210> 252
<211> 1076
<212> DNA
<213> Homo sapiens

<400> 252
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gcctctggac cagtgaaga gctggtcggt tccgttggtg gggccgtgac 150
tttccccctg aagtccaaag taaagcaagt tgactctatt gtctggacct 200
tcaacacaac cctcttctg accatacagc cagaaggggg cactatcata 250
gtgacccaaa atcgtaatag ggagagagta gacttcccag atggaggcta 300
ctccctgaag ctgagcaaac tgaagaagaa tgactcaggg atctactatg 350
tggggatata cagctcatca ctccagcagc cctccacca ggagtacgtg 400
ctgcatgtct acgagcacct gtcaaagcct aaagtcacca tgggtctgca 450
gagcaataag aatggcacct gtgtgaccaa tctgacatgc tgcattggaac 500
atggggaaga ggatgtgatt tatacctgga aggcctggg gcaagcagcc 550
aatgagtccc ataatgggtc catcctcccc atctcctgga gatggggaga 600
aagtgatatg accttcatct gcgttgccag gaaccctgtc agcagaaact 650
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ccagattcct ccattgtcct cctgtgtctc ctgttggtgc ccctcctgct 750
cagtctcttt gtactggggc tatttctttg gtttctgaag agagagagac 800
aagaagagta cattgaagag aagaagagag tggacatttg tcgggaaact 850
cctaacatat gccccattc tggagagaac acagagtacg acacaatccc 900
tcacactaat agaacaatcc taaaggaaga tccagcaaact acggtttact 950
ccactgtgga aataccgaaa aagatggaaa atccccactc actgctcacg 1000
atgccagaca caccaaggct atttgctat gagaatgtta tctagacagc 1050
agtgcactcc cctaagtctc tgcctca 1076

<210> 253
<211> 335
<212> PRT
<213> Homo sapiens

<400> 253
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320

325

330

Tyr Glu Asn Val Ile
335

<210> 254
<211> 1053
<212> DNA
<213> Homo sapiens

<400> 254
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ggccgtgact ttccccctga agtccaaagt aaagcaagtt gactctattg 150
tctggacctt caacacaacc cctcttgtca ccatacagcc agaagggggc 200
actatcatag tgacccaaaa tcgtaatagg gagagagtag acttcccaga 250
tggaggctac tccctgaagc tcagcaaact gaagaagaat gactcaggga 300
tctactatgt ggggatatac agctcatcac tccagcagcc ctccaccag 350
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gggtctgcag agcaataaga atggcacctg tgtgaccaat ctgacatgct 450
gcatggaaca tggggaagag gatgtgattt atacctggaa ggccctgggg 500
caagcagcca atgagtccca taatgggtcc atcctcccca tctcctggag 550
atggggagaa agtgatatga ccttcatctg cgttgccagg aaccctgtca 600
gcagaaactt ctcaagcccc atccttgcca ggaagctctg tgaagggtgct 650
gctgatgacc cagattcctc catggtcctc ctgtgtctcc tgttggtgcc 700
cctcctgctc agtctctttg tactggggct atttctttgg tttctgaaga 750
gagagagaca agaagagtac attgaagaga agaagagagt ggacatttgt 800
cgggaaaactc ctaacatatg cccccattct ggagagaaca cagagtacga 850
cacaatccct cacactaata gaacaatcct aaaggaagat ccagcaaata 900
cggtttactc cactgtggaa ataccgaaaa agatggaaaa tccccactca 950
ctgctcacga tgccagacac accaaggcta tttgcctatg agaatgttat 1000
ctagacagca gtgcactccc ctaagtctct gctcaaaaaa aaaaaaaaaa 1050
aaa 1053

<210> 255
<211> 860
<212> DNA
<213> Homo sapiens

<400> 255
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aagaagctag ttctacggga aggaacttta atgtagaaaa gattaatggg 150
gaatggcata ctattatcct ggcctctgac aaaagagaaa agatagaaga 200
acatggcaac tttagacttt ttctggagca aatccatgtc ttggagaatt 250
ccttagttct taaagtccat actgtaagag atgaagagtg ctccgaatta 300
tctatggttg ctgacaaaac agaaaaggct ggtgaatatt ctgtgacgta 350
tgatggattc aatacattta ctatacctaa gacagactat gataactttc 400
ttatggctca cctcattaac gaaaaggatg gggaaacctt ccagctgatg 450
gggctctatg gccgagaacc agatttgagt tcagacatca aggaaagggt 500
tgcacaacta tgtgaggagc atggaatcct tagagaaaat atcattgacc 550
tatccaatgc caatcgctgc ctccaggccc gagaatgaag aatggcctga 600
gcctccagtg ttgagtggac acttctcacc aggactccac catcatccct 650
tcctatccat acagcatccc cagtataaat tctgtgatct gcattccatc 700
ctgtctcact gagaagtcca attccagtct atcaacatgt tacctaggat 750
acctcatcaa gaatcaaaga cttcttttaa tttctctttg atacaccctt 800
gacaatTTTT catgaaatta ttcctcttcc tgttcaataa atgattaccc 850
ttgcacttaa 860

<210> 256

<211> 180

<212> PRT

<213> Homo sapiens

<400> 256

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Met | Leu | Leu | Leu | Leu | Cys | Leu | Gly | Leu | Thr | Leu | Val | Cys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Val | His | Ala | Glu | Glu | Ala | Ser | Ser | Thr | Gly | Arg | Asn | Phe | Asn | Val |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Glu | Lys | Ile | Asn | Gly | Glu | Trp | His | Thr | Ile | Ile | Leu | Ala | Ser | Asp |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Lys | Arg | Glu | Lys | Ile | Glu | Glu | His | Gly | Asn | Phe | Arg | Leu | Phe | Leu |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Glu | Gln | Ile | His | Val | Leu | Glu | Asn | Ser | Leu | Val | Leu | Lys | Val | His |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Thr | Val | Arg | Asp | Glu | Glu | Cys | Ser | Glu | Leu | Ser | Met | Val | Ala | Asp |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Lys | Thr | Glu | Lys | Ala | Gly | Glu | Tyr | Ser | Val | Thr | Tyr | Asp | Gly | Phe |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Asn | Thr | Phe | Thr | Ile | Pro | Lys | Thr | Asp | Tyr | Asp | Asn | Phe | Leu | Met |
| | | | 110 | | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | His | Leu | Ile | Asn | Glu | Lys | Asp | Gly | Glu | Thr | Phe | Gln | Leu | Met |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Gly | Leu | Tyr | Gly | Arg | Glu | Pro | Asp | Leu | Ser | Ser | Asp | Ile | Lys | Glu |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Arg | Phe | Ala | Gln | Leu | Cys | Glu | Glu | His | Gly | Ile | Leu | Arg | Glu | Asn |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ile | Ile | Asp | Leu | Ser | Asn | Ala | Asn | Arg | Cys | Leu | Gln | Ala | Arg | Glu |
| | | | | 170 | | | | | 175 | | | | | 180 |

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 <211> 766
 <212> DNA
 <213> Homo sapiens

<400> 257
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 ttctcaatgc gatacctcta attgtcagct tagttgagga agaccaat 150
 tctcaaaacc ccattctctt ctttgagtgg tggttcccag gaattatagg 200
 agcaggtctg atggccattc cagcaacaac aatgtccttg acagcaagaa 250
 aaagagcgtg ctgcaacaac agaactggaa tgtttctttc atcatttttc 300
 agtgtgatca cagtcattgg tgctctgtat tgcattgctga tatccatcca 350
 ggctctctta aaaggctctc tcatgtgtaa ttctccaagc aacagtaatg 400
 ccaattgtga attttcattg aaaaacatca gtgacattca tccagaatcc 450
 ttcaacttgc agtgggtttt caatgactct tgtgcacctc ctactgggtt 500
 caataaacc accagtaacg acaccatggc gagggtgctg agagcatcta 550
 gtttccaact cgattctgaa gaaaacaaac ataggcttat ccacttctca 600
 gtatttttag gtctattgct tgttggaatt ctggaggtcc tgtttgggct 650
 cagtcagata gtcacgggtt tcttggtgct tctgtgtgga gtctctaagc 700
 gaagaagtca aattgtgtag tttaatggga ataaatgta agtatcagta 750
 gtttgaaaaa aaaaaa 766

<210> 258
 <211> 229
 <212> PRT
 <213> Homo sapiens

<400> 258
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 20 25 30
 Ile Val Ser Leu Val Glu Glu Asp Gln Phe Ser Gln Asn Pro Ile

tcaacacggtt gctttaataa atcacttgcc ctgc 434

<210> 260

<211> 83

<212> PRT

<213> Homo sapiens

<400> 260

Met Arg Leu Ser Val Cys Leu Leu Met Val Ser Leu Ala Leu Cys
1 5 10 15

Cys Tyr Gln Ala His Ala Leu Val Cys Pro Ala Val Ala Ser Glu
20 25 30

Ile Thr Val Phe Leu Phe Leu Ser Asp Ala Ala Val Asn Leu Gln
35 40 45

Val Ala Lys Leu Asn Pro Pro Pro Glu Ala Leu Ala Ala Lys Leu
50 55 60

Glu Val Lys His Cys Thr Asp Gln Ile Ser Phe Lys Lys Arg Leu
65 70 75

Ser Leu Lys Lys Ser Trp Trp Lys
80

<210> 261

<211> 636

<212> DNA

<213> Homo sapiens

<400> 261

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ctgaccaatt gagctgtgag cctggagcag atccgtgggc tgcagacccc 150

cgccccagtg cctctcccc tgcagccctg cccctcgaac tgtgacatgg 200

agagagtgac cctggccctt ctctactgg caggcctgac tgccttgga 250

gccaatgacc catttgccaa taaagacgat cccttctact atgactggaa 300

aaacctgcag ctgagcggac tgatctgcgg agggctcctg gccattgctg 350

ggatcgcggc agttctgagt ggcaaagca aatacaagag cagccagaag 400

cagcacagtc ctgtacctga gaaggccatc ccaactcatca ctccaggctc 450

tgccactact tgctgagcac aggactggcc tccagggatg gcctgaagcc 500

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<210> 262

<211> 89

<212> PRT

<213> Homo sapiens

<400> 262

Met Glu Arg Val Thr Leu Ala Leu Leu Leu Leu Ala Gly Leu Thr
1 5 10 15

Ala Leu Glu Ala Asn Asp Pro Phe Ala Asn Lys Asp Asp Pro Phe
20 25 30

Tyr Tyr Asp Trp Lys Asn Leu Gln Leu Ser Gly Leu Ile Cys Gly
35 40 45

Gly Leu Leu Ala Ile Ala Gly Ile Ala Ala Val Leu Ser Gly Lys
50 55 60

Cys Lys Tyr Lys Ser Ser Gln Lys Gln His Ser Pro Val Pro Glu
65 70 75

Lys Ala Ile Pro Leu Ile Thr Pro Gly Ser Ala Thr Thr Cys
80 85

<210> 263

<211> 1676

<212> DNA

<213> Homo sapiens

<400> 263

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actcctgctg ctggttgtgg gctcctggct actcgcccgc atcctggctt 150
ggacctatgc cttctataac aactgccgcc ggctccagtg tttcccacag 200
ccccaaaac ggaactgggt ttggggtcac ctgggcctga tcaactctac 250
agaggagggc ttgaaggact cgaccagat gtcggccacc tattcccagg 300
gctttacggt atggctgggt cccatcatcc ccttcacgtt tttatgccac 350
cctgacacca tccggtctat caccaatgcc tcagctgcca ttgcaccaa 400
ggataatctc ttcacaggt tctgaagcc ctggctggga gaaggatac 450
tgctgagtgg cggtgacaag tggagccgcc accgtcggat gctgacgcc 500
gccttcatt tcaacatcct gaagtccat ataacgatct tcaacaagag 550
tgcaaacatc atgcttgaca agtggcagca cctggcctca gagggcagca 600
gtcgtctgga catgtttgag cacatcagcc tcatgacctt ggacagtcta 650
cagaaatgca tcttcagctt tgacagccat tgtcaggaga ggcccagtga 700
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agcatatcct ccagcacatg gactttctgt attacctctc ccatgacggg 800
cggcgcttcc acagggcctg ccgcctgggt catgacttca cagacgctgt 850
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tgtaggcttg cagtgacttt ctgaccatc cacctgtttt tttgcagatt 1650
gtcatgaata aaacggtgct gtcaaa 1676

<210> 264
<211> 524
<212> PRT
<213> Homo sapiens

<400> 264
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Met Ser Pro Trp Leu Leu Leu Leu Leu Val Val Gly Ser Trp Leu
20 25 30
Leu Ala Arg Ile Leu Ala Trp Thr Tyr Ala Phe Tyr Asn Asn Cys
35 40 45
Arg Arg Leu Gln Cys Phe Pro Gln Pro Pro Lys Arg Asn Trp Phe
50 55 60
Trp Gly His Leu Gly Leu Ile Thr Pro Thr Glu Glu Gly Leu Lys
65 70 75
Asp Ser Thr Gln Met Ser Ala Thr Tyr Ser Gln Gly Phe Thr Val
80 85 90
Trp Leu Gly Pro Ile Ile Pro Phe Ile Val Leu Cys His Pro Asp
95 100 105
Thr Ile Arg Ser Ile Thr Asn Ala Ser Ala Ala Ile Ala Pro Lys
110 115 120
Asp Asn Leu Phe Ile Arg Phe Leu Lys Pro Trp Leu Gly Glu Gly
125 130 135

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Gly | Arg | Ser | Pro | Leu | Ala | Phe | Ile | Pro | Phe | Ser | Ala | Gly | Pro |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Arg | Asn | Cys | Ile | Gly | Gln | Ala | Phe | Ala | Met | Ala | Glu | Met | Lys | Val |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Val | Leu | Ala | Leu | Met | Leu | Leu | His | Phe | Arg | Phe | Leu | Pro | Asp | His |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Thr | Glu | Pro | Arg | Arg | Lys | Leu | Glu | Leu | Ile | Met | Arg | Ala | Glu | Gly |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Gly | Leu | Trp | Leu | Arg | Val | Glu | Pro | Leu | Asn | Val | Gly | Leu | Gln | |
| | | | | 515 | | | | | 520 | | | | | |

<210> 265
 <211> 584
 <212> DNA
 <213> Homo sapiens

<400> 265
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 ctggcctcct gctgttttgc tttcacagga ttcttaaata ctctcttata 100
 tcttcctctc cttgactcca gggaaatata ctttcaactc tcagcacctc 150
 atgaagacgc gcgcttaact ccggaggagc tagaaagagc ttcccttcta 200
 cagatatgtc cagagatgct ggggtgcagaa agaggggata ttctcaggaa 250
 agcagactca agtaccaaca tttttaaccc aagaggaaat ttgagaaagt 300
 ttcaggattt ctctggacaa gatcctaaca ttttactgag tcattctttg 350
 gccagaatct ggaaaccata caagaaacgt gagactcctg attgcttctg 400
 gaaatactgt gtctgaagtg aaataagcat ctgttagtca gtcagaaac 450
 acctatctta gaatatgaaa aataacacaa tgcttgattt gaaaacagtg 500
 tggagaaaaa ctaggcaaac tacacctgtg tcattgttac ctggaaaata 550
 aatcctctat gttttgcaca aaaaaaaaaa aaaa 584

<210> 266
 <211> 124
 <212> PRT
 <213> Homo sapiens

<400> 266
 Met Tyr Lys Leu Ala Ser Cys Cys Leu Leu Phe Thr Gly Phe Leu
 1 5 10 15
 Asn Pro Leu Leu Ser Leu Pro Leu Leu Asp Ser Arg Glu Ile Ser
 20 25 30
 Phe Gln Leu Ser Ala Pro His Glu Asp Ala Arg Leu Thr Pro Glu
 35 40 45
 Glu Leu Glu Arg Ala Ser Leu Leu Gln Ile Leu Pro Glu Met Leu
 50 55 60

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Lys | Leu | Gln | Pro | Arg | Ala | Leu | Ala | Gly | Trp | Leu | Arg | Pro | Glu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Asp | Gly | Gly | Gln | Ala | Glu | Gly | Ala | Glu | Asp | Glu | Leu | Glu | Val | Arg |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Phe | Asn | Ala | Pro | Phe | Asp | Val | Gly | Ile | Lys | Leu | Ser | Gly | Val | Gln |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Tyr | Gln | Gln | His | Ser | Gln | Ala | Leu | Gly | Lys | Phe | Leu | Gln | Asp | Ile |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Trp | Glu | Glu | Ala | Lys | Glu | Ala | Pro | Ala | Asp | Lys | | | |
| | | | | 110 | | | | | 115 | | | | | |

<210> 269
 <211> 1332
 <212> DNA
 <213> Homo sapiens

<400> 269
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 agaatatgaa cacgtggctg ctgttcctcc ccctgttccc ggtgcaggctg 150
 cagaccctga tagtcgtgat catcgggatg ctctgtgctcc tgctggactt 200
 tcttggttg gtgcacctgg gccagctgct catcttcac atctacctga 250
 gtatgtcccc caccctaagc cccgatccc cccaaggctg ggtggtcaga 300
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 cagcctggg gccagagtct ttgtcccccg tgtgcgcatg tgttcagggt 400
 cagcctctcc cagaagtgag atcatggaca aaaagggcaa atcacaggaa 450
 gaaattaaat ccatgaggac ccagcaggcc cagcaagaag ctgaactcac 500
 gccgagacct gcaggagtgg tgccaggctg ttgaagtaac aagtttaaaa 550
 tgttcagaga caatggaatg gaatctatta ggcaagaaca ggacattatg 600
 aaataaggac aggtggactt ccaaaaacac aagtagaaat tctaacaatg 650
 aaatatatta caggcaggct acccactaac caaacaactg aagcgagagc 700
 tgtggtcttg cttggtctca cagtgggcac agcggtaggc ggtcagtcac 750
 gttgctgaac gaaggagggt aaactcccca gccccaagaa aacctgtgtt 800
 ggaagtaaca acaacctccc tgctcctggc accagccgtt ttggtcatgg 850
 tgggccagct gcaaagcgtc ttccattctc tgggcagtgg tggccccgag 900
 gctgtggcct ctcaaggggt ttctgtggac acgggcagca gagtgtgtcc 950
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 tcagggcaga gggagttggg tgggtcaggc tctgggctca cctccatctc 1050

cagagcatcc cctgcctgca gttgtggcaa gaacgcccag ctcagaatga 1100
 acacacccca ccaagagcct ccttggtcat aaccacaggt taccctacaa 1150
 accactgtcc ccacacaacc ctggggatgt tttaaaacac acacctctaa 1200
 cgcatacttt acagtcactg ttgtcttgcc tgagggttga atttttttta 1250
 atgaaagtgc aatgaaaatc actggattaa atcctacgga cacagagctg 1300
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aa 1332

<210> 270
 <211> 142
 <212> PRT
 <213> Homo sapiens

<400> 270
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 Gln Thr Leu Ile Val Val Ile Ile Gly Met Leu Val Leu Leu Leu
 20 25 30
 Asp Phe Leu Gly Leu Val His Leu Gly Gln Leu Leu Ile Phe His
 35 40 45
 Ile Tyr Leu Ser Met Ser Pro Thr Leu Ser Pro Arg Ser Pro Gln
 50 55 60
 Gly Trp Val Val Arg Ala Ala His Leu Thr Pro Leu Leu Glu Tyr
 65 70 75
 Val Pro Asn Pro Glu Pro Pro Thr Pro Gly Ala Arg Val Phe Val
 80 85 90
 Pro Arg Val Arg Met Cys Ser Gly Ser Ala Ser Pro Arg Ser Glu
 95 100 105
 Ile Met Asp Lys Lys Gly Lys Ser Gln Glu Glu Ile Lys Ser Met
 110 115 120
 Arg Thr Gln Gln Ala Gln Gln Glu Ala Glu Leu Thr Pro Arg Pro
 125 130 135
 Ala Gly Val Val Pro Gly Ala
 140

<210> 271
 <211> 1484
 <212> DNA
 <213> Homo sapiens

<400> 271
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 cctatctgcc atcctcagca tgctatcact cagcttctcc acaacatccc 150
 tgctcagcaa ctactggttt gtgggcacac agaaggtgcc caagcccctg 200
 tgcgagaaag gtctggcagc caagtgtttt gacatgccag tgtccctgga 250

tggagataacc aacacatcca cccaggaggt ggtacaatac aactgggaga 300
 ctgggggatga ccggttctcc ttccggagct tccggagtgg catgtggcta 350
 tcctgtgagg aaactgtgga agaaccaggg gagaggtgcc gaagtttcat 400
 tgaacttaca ccaccagcca agagaggtga gaaaggacta ctggaatttg 450
 ccacgttgca aggcccatgt caccctactc tccgatttgg agggaagcgg 500
 ttgatggaga aggttccct cccctcccct cccttggggc tttgtggcaa 550
 aaatcctatg gttatccctg ggaacgcaga tcacctacat cggacttcaa 600
 ttcacagct tcctcctgct actaacagac ttgctactca ctgggaaccc 650
 tgccctgtggg ctcaaaactga gcgcctttgc tgctgtttcc tctgtcctgt 700
 caggtctcct ggggatgggtg gccacatga tgtattcaca agtcttccaa 750
 gcgactgtca acttgggtcc agaagactgg agaccacatg tttggaatta 800
 tggctgggcc ttctacatgg cctggctctc cttcacctgc tgcattggcgt 850
 cggctgtcac caccttcaac acgtacacca ggatgggtgct ggagttcaag 900
 tgcaagcata gtaagagctt caaggaaaac ccgaactgcc taccacatca 950
 ccatcagtgt ttccctcggc ggctgtcaag tgcagcccc accgtgggtc 1000
 ctttgaccag ctaccaccag tatcataatc agcccatcca ctctgtctct 1050
 gagggagtgc acttctactc cgagctgcgg aacaagggat ttcaaagagg 1100
 ggccagccag gagctgaaag aagcagttag gtcattctgta gaggaagagc 1150
 agtgtttagga gttaagcggg tttggggagt aggcctgagc cctacottac 1200
 acgtctgctg attatcaaca tgtgcttaag ccaacatccg tctcttgagc 1250
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 tcctaaggga ttctgggtg ccaactgctc tttttctct acagctccat 1350
 cttgtttcac ccaccacaca tctcacacat ccagaattcc cttctttact 1400
 gatagtttct gtgccaggtt ctgggctaaa ccatggagat aaaaagaaga 1450
 gtaaaatata cttcccgacc ttaaggatct gaaa 1484

<210> 272
 <211> 285
 <212> PRT
 <213> Homo sapiens

<400> 272
 Met Ala Lys Met Glu Leu Ser Lys Ala Phe Ser Gly Gln Arg Thr
 1 5 10 15
 Leu Leu Ser Ala Ile Leu Ser Met Leu Ser Leu Ser Phe Ser Thr
 20 25 30
 Thr Ser Leu Leu Ser Asn Tyr Trp Phe Val Gly Thr Gln Lys Val

| 35 | | | | | | | | | | 40 | | | | | 45 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Pro | Lys | Pro | Leu | Cys | Glu | Lys | Gly | Leu | Ala | Ala | Lys | Cys | Phe | Asp | | | | | |
| | | | | 50 | | | | | 55 | | | | | 60 | | | | | |
| Met | Pro | Val | Ser | Leu | Asp | Gly | Asp | Thr | Asn | Thr | Ser | Thr | Gln | Glu | | | | | |
| | | | | 65 | | | | | 70 | | | | | 75 | | | | | |
| Val | Val | Gln | Tyr | Asn | Trp | Glu | Thr | Gly | Asp | Asp | Arg | Phe | Ser | Phe | | | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | | | |
| Arg | Ser | Phe | Arg | Ser | Gly | Met | Trp | Leu | Ser | Cys | Glu | Glu | Thr | Val | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Glu | Glu | Pro | Gly | Glu | Arg | Cys | Arg | Ser | Phe | Ile | Glu | Leu | Thr | Pro | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Pro | Ala | Lys | Arg | Gly | Glu | Lys | Gly | Leu | Leu | Glu | Phe | Ala | Thr | Leu | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Gln | Gly | Pro | Cys | His | Pro | Thr | Leu | Arg | Phe | Gly | Gly | Lys | Arg | Leu | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Met | Glu | Lys | Ala | Ser | Leu | Pro | Ser | Pro | Pro | Leu | Gly | Leu | Cys | Gly | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Lys | Asn | Pro | Met | Val | Ile | Pro | Gly | Asn | Ala | Asp | His | Leu | His | Arg | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Thr | Ser | Ile | His | Gln | Leu | Pro | Pro | Ala | Thr | Asn | Arg | Leu | Ala | Thr | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| His | Trp | Glu | Pro | Cys | Leu | Trp | Ala | Gln | Thr | Glu | Arg | Leu | Cys | Cys | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Cys | Phe | Leu | Cys | Pro | Val | Arg | Ser | Pro | Gly | Asp | Gly | Gly | Pro | His | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Asp | Val | Phe | Thr | Ser | Leu | Pro | Ser | Asp | Cys | Gln | Leu | Gly | Ser | Arg | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Arg | Leu | Glu | Thr | Thr | Cys | Leu | Glu | Leu | Trp | Leu | Gly | Leu | Leu | His | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Gly | Leu | Ala | Leu | Leu | His | Leu | Leu | His | Gly | Val | Gly | Cys | His | His | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Leu | Gln | His | Val | His | Gln | Asp | Gly | Ala | Gly | Val | Gln | Val | Gln | Ala | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |

<210> 273
 <211> 1158
 <212> DNA
 <213> Homo sapiens

<400> 273
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 ctcacttaag tctcaggcct gtcagcagct cctgtggaca ttgccatccc 150
 ctctggttagc cttcagagca aacaggacaa cctatgttat ggatgtttcc 200

<210> 275
 <211> 2694
 <212> DNA
 <213> Homo sapiens

<400> 275
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 atgtgccctt ccaatataca acaaatactg gccctctttt gttctatttt 200
 ttacatcctt ttcacctatt ccatactgca tagcaagaag attagtggat 250
 gatacagatg ctatgagtaa cgcttgtaag gaacttgcca tctttcttac 300
 aacgggcatt gtcgtgtcag cttttggact ccctattgta tttgccagag 350
 cacatctgat tgagtgggga gcttgtgcac ttgttctcac aggaaacaca 400
 gtcactcttg caactatact aggccttttc ttggctcttg gaagcaatga 450
 cgacttcagc tggcagcagt ggtgaaaaga aattactgaa ctattgtcaa 500
 atggacttcc tgtcatttgt tggccattca cgcacacagg agatggggca 550
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 cttctcactt ttattgtaag catactatct tcacagagac ttgctgaagg 650
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 ttctgttagt gttgattttt tttggaatca atatgcaatg ttaaactatt 800
 ttttaatgta atcatttgca ttggttagga attcagaatt ccgccggctc 850
 tattactggt caagtacatc ttttctctta aaattattta gcctccatta 900
 ttacaaaaaa ttataaaaat aagttttcag tcagtcagga tgacatcact 950
 cccaatgta tgcagacata cagacggttg gcatacgta tagactgtat 1000
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 tgcccatgcc ctccgttaag ggttggttgg tttactggta gacagatgtt 1100
 ttgtggattg aaaattattt tatggaattg ctacagagga gtgcttttct 1150
 tctcaattgt tagaagaatt tatgttaaac ttttaaggtaa ggggtgtaaaa 1200
 acatttttga gataagggtt ttatttatgt ttattattgt tagagtgagt 1250
 tgcaatgtgg gaagaaatga cattgaaatt ccagtttttg aatcctgttt 1300
 ctatttataa gtgaaatttg tgatctccta tcaacctttc atgttttacc 1350
 ctgttaaaat ggacatacat ggaaccacta ctgatgaggg acagttgtat 1400
 gtttgcata tatatgccag aaaaccttcc tctgcttctt ccttttgact 1450

tatttggtat gttgtatata ttacataaaa taacttttca aatatagttt 1500
aataacactt agaagtgttt acttacctgg aaaataattg ctatgccgta 1550
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cctattttct gttctggatg tcagtgcagt gcactgctac tgttttatcc 2450
acttggccac agactttttc taacagctgc gtattatttc tatatactaa 2500
ttgcattggc agcattgtgt ctttgacctt gtatactagc ttgacatagt 2550
gctgtctctg atttctagga tagttacttg agatatgaat tttccataga 2600
atatgcactg atacaacatt accattcttc tatggaaaga aaacttttga 2650
tgatgaaaca ataaagattt taaatatcta ttttaaaaaa aaaa 2694

<210> 276

<211> 131

<212> PRT

<213> Homo sapiens

<400> 276

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Gly | Ile | Lys | Ala | Leu | Ile | Ser | Leu | Ser | Phe | Gly | Gly | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Gly | Leu | Met | Phe | Leu | Met | Leu | Gly | Cys | Ala | Leu | Pro | Ile | Tyr |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Lys | Tyr | Trp | Pro | Leu | Phe | Val | Leu | Phe | Phe | Tyr | Ile | Leu | Ser |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| | | | | | |
|---|-----|--|-----|--|-----|
| | 35 | | 40 | | 45 |
| Pro Ile Pro Tyr Cys Ile Ala Arg Arg Leu Val Asp Asp Thr Asp | 50 | | 55 | | 60 |
| Ala Met Ser Asn Ala Cys Lys Glu Leu Ala Ile Phe Leu Thr Thr | 65 | | 70 | | 75 |
| Gly Ile Val Val Ser Ala Phe Gly Leu Pro Ile Val Phe Ala Arg | 80 | | 85 | | 90 |
| Ala His Leu Ile Glu Trp Gly Ala Cys Ala Leu Val Leu Thr Gly | 95 | | 100 | | 105 |
| Asn Thr Val Ile Phe Ala Thr Ile Leu Gly Phe Phe Leu Val Phe | 110 | | 115 | | 120 |
| Gly Ser Asn Asp Asp Phe Ser Trp Gln Gln Trp | 125 | | 130 | | |

<210> 277
 <211> 4104
 <212> DNA
 <213> Homo sapiens

<400> 277
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 cacactgoot ggtggaggga aggagcccg ggcctctcg ccgctccccg 150
 cgccgcgcgtc cgcacctccc caccgcccgc cgccgcgcgc ccgcccgcgc 200
 caaagcatga gtgagccgcg tctctgcagc tgcccggggc gcgaatggca 250
 ggctgtttcc gcgagtaaa aggtggcgcc ggtcagtggc cgtttccaat 300
 gacggacatt aaccagactg tcagatcctg gggagtcgcg agccccgagt 350
 ttggagtttt ttccccccac aacgtcacag tccgaactgc agagggaaag 400
 gaaggcggca ggaaggcgaa gctcgggctc cggcacgtag ttgggaaact 450
 tgccgggtcct agaagtcgcc tccccgcctt gccggccgcc cttgcagccc 500
 cgagccgagc agcaaagtga gacattgtgc gcctgccaga tccgccggcc 550
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caatcagctc aagagtctgg cgcgcaactc tttcgccggc ttgtttaagc 1350
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 gaggttttcc gaatatttat atagaaaaaa agtcttttca catgacaaat 3300
 gacactctca caccagtctt agccctagta gttttttagg ttggaccaga 3350
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 ccagaaatta tatctgtttt ggagcaagag tgtcataatg tttcagggtg 3950
 gtcaaaataa acataaatta tctcctctag atgagtggcg atgttggtctg 4000
 atttgggtct gccattgaca gaatgtcaaa taaaaggaa ttagctagaa 4050
 tatgaccatt aaatgtgctt ctgaaatata ttttgagata ggtttagaat 4100
 gtca 4104

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Leu | Asp | Ser | Asn | Arg | Leu | Thr | Tyr | Ile | Glu | Pro | Arg | Ile | Leu | 290 | 295 | 300 |
| Asn | Ser | Trp | Lys | Ser | Leu | Thr | Ser | Ile | Thr | Leu | Ala | Gly | Asn | Leu | 305 | 310 | 315 |
| Trp | Asp | Cys | Gly | Arg | Asn | Val | Cys | Ala | Leu | Ala | Ser | Trp | Leu | Ser | 320 | 325 | 330 |
| Asn | Phe | Gln | Gly | Arg | Tyr | Asp | Gly | Asn | Leu | Gln | Cys | Ala | Ser | Pro | 335 | 340 | 345 |
| Glu | Tyr | Ala | Gln | Gly | Glu | Asp | Val | Leu | Asp | Ala | Val | Tyr | Ala | Phe | 350 | 355 | 360 |
| His | Leu | Cys | Glu | Asp | Gly | Ala | Glu | Pro | Thr | Ser | Gly | His | Leu | Leu | 365 | 370 | 375 |
| Ser | Ala | Val | Thr | Asn | Arg | Ser | Asp | Leu | Gly | Pro | Pro | Ala | Ser | Ser | 380 | 385 | 390 |
| Ala | Thr | Thr | Leu | Ala | Asp | Gly | Gly | Glu | Gly | Gln | His | Asp | Gly | Thr | 395 | 400 | 405 |
| Phe | Glu | Pro | Ala | Thr | Val | Ala | Leu | Pro | Gly | Gly | Glu | His | Ala | Glu | 410 | 415 | 420 |
| Asn | Ala | Val | Gln | Ile | His | Lys | Val | Val | Thr | Gly | Thr | Met | Ala | Leu | 425 | 430 | 435 |
| Ile | Phe | Ser | Phe | Leu | Ile | Val | Val | Leu | Val | Leu | Tyr | Val | Ser | Trp | 440 | 445 | 450 |
| Lys | Cys | Phe | Pro | Ala | Ser | Leu | Arg | Gln | Leu | Arg | Gln | Cys | Phe | Val | 455 | 460 | 465 |
| Thr | Gln | Arg | Arg | Lys | Gln | Lys | Gln | Lys | Gln | Thr | Met | His | Gln | Met | 470 | 475 | 480 |
| Ala | Ala | Met | Ser | Ala | Gln | Glu | Tyr | Tyr | Val | Asp | Tyr | Lys | Pro | Asn | 485 | 490 | 495 |
| His | Ile | Glu | Gly | Ala | Leu | Val | Ile | Ile | Asn | Glu | Tyr | Gly | Ser | Cys | 500 | 505 | 510 |
| Thr | Cys | His | Gln | Gln | Pro | Ala | Arg | Glu | Cys | Glu | Val | | | | 515 | 520 | |

<210> 279

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 279

tccgtgcagg gggacgcctt tcagaaactg cgccgagtta aggaac 46

<210> 280

<211> 709

<212> DNA

<213> Homo sapiens

<400> 280
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 cacggacttc gacgtcgag ccaactggag ccagaaccgg acccctgctg 150
 ccggcggcgc cgttgagttc ccggcggaca agatgggtgtc agtcctggtg 200
 caagaaggtc acgccgtctc agacatgtct ctgccgtgtg atggggaact 250
 cgtcctgggt tcaggagccg gattcggcgt ctgagacgtg ggctcgacc 300
 tggactgtgg cgcgggcgaa cctgccgtct tccgcgactc tgaccgcttc 350
 tcctggcatg acccgcacct gtggcgctct ggggacgagg cacctggcct 400
 cttcttcgtg gacgccgagc gcgtgccctg ccgccacgac gacgtcttct 450
 ttccgcctag tgctccttc cgctggggc tcggccctgg cgctagcccc 500
 gtgcgtgtcc gcagcatctc ggctctgggc cggacgttca cgcgcgacga 550
 ggacctgggt gttttcctgg cgtcccgcg gggccgccta cgcttccacg 600
 ggcggggcgc gctgagcgtg ggccccgagg actgcgcgga cccgtcgggc 650
 tgcgtctgcg gcaacgcgga ggcgagccg tggatctgcg cggccctgct 700
 ccagcccct 709

<210> 281
 <211> 229
 <212> PRT
 <213> Homo sapiens

<400> 281
 Met Gly Val Leu Gly Arg Val Leu Leu Trp Leu Gln Leu Cys Ala
 1 5 10 15
 Leu Thr Gln Ala Val Ser Lys Leu Trp Val Pro Asn Thr Asp Phe
 20 25 30
 Asp Val Ala Ala Asn Trp Ser Gln Asn Arg Thr Pro Cys Ala Gly
 35 40 45
 Gly Ala Val Glu Phe Pro Ala Asp Lys Met Val Ser Val Leu Val
 50 55 60
 Gln Glu Gly His Ala Val Ser Asp Met Leu Leu Pro Leu Asp Gly
 65 70 75
 Glu Leu Val Leu Ala Ser Gly Ala Gly Phe Gly Val Ser Asp Val
 80 85 90
 Gly Ser His Leu Asp Cys Gly Ala Gly Glu Pro Ala Val Phe Arg
 95 100 105
 Asp Ser Asp Arg Phe Ser Trp His Asp Pro His Leu Trp Arg Ser
 110 115 120
 Gly Asp Glu Ala Pro Gly Leu Phe Phe Val Asp Ala Glu Arg Val
 125 130 135

Pro Cys Arg His Asp Asp Val Phe Phe Pro Pro Ser Ala Ser Phe
140 145 150

Arg Val Gly Leu Gly Pro Gly Ala Ser Pro Val Arg Val Arg Ser
155 160 165

Ile Ser Ala Leu Gly Arg Thr Phe Thr Arg Asp Glu Asp Leu Ala
170 175 180

Val Phe Leu Ala Ser Arg Ala Gly Arg Leu Arg Phe His Gly Pro
185 190 195

Gly Ala Leu Ser Val Gly Pro Glu Asp Cys Ala Asp Pro Ser Gly
200 205 210

Cys Val Cys Gly Asn Ala Glu Ala Gln Pro Trp Ile Cys Ala Ala
215 220 225

Leu Leu Gln Pro

<210> 282
<211> 644
<212> DNA
<213> Homo sapiens

<400> 282
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tgtgttttgc acttaccctg tgttctgcct tttggtggca taacaaggga 150
cttgcaactta tcttctgcat tttgcagtct ttggcattga cgtggtacag 200
cctttccttc ataccatttg caagggatgc tgtgaagaag tgttttgccg 250
tgtgtcttgc ataattcatg gccagtttta tgaagctttg gaaggcacta 300
tggacagaag ctggtggaca gttttgtaac tatcttcgaa acctctgtct 350
tacagacatg tgccttttat cttgcagcaa tgtgttgctt gtgattcgaa 400
catttgaggg ttacttttgg aagcaacaat acattctcga acctgaatgt 450
cagtagcaca ggatgagaag tgggttctgt atcttgtgga gtggaatctt 500
cctcatgtac ctgtttcctc totggatgtt gtccactga attcccatga 550
atacaaacct attcagcaac agcaaaaaaa aaaaaaaaaa aaaaaaaaaa 600
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 644

<210> 283
<211> 77
<212> PRT
<213> Homo sapiens

<400> 283
Met Gly Pro Val Lys Gln Leu Lys Arg Met Phe Glu Pro Thr Arg
1 5 10 15
Leu Ile Ala Thr Ile Met Val Leu Leu Cys Phe Ala Leu Thr Leu

aactcacgct catcctaatac ttactgttta caaaaaagaa gacgttccag 1150
aaaggtggca ttacaaatac aacagtcgaa ttcaaccaat catagcagtg 1200
gctgatgaag ggtggcacat tttacagaat aagtcagatg actttctgtt 1250
aggcaaccac gggttacgata atgcgttagc agatatgcat ccaatatttt 1300
tagcccatgg tcttgccttc agaaagaatt tctcaaaaga agccatgaac 1350
tccacagatt tgtaccact actatgccac ctctcaata tcaactgcat 1400
gccacacaat ggatcattct ggaatgtcca ggatctgctc aattcagcaa 1450
tgccaagggg ggtcccttat acacagagta ctatactcct ccctggtagt 1500
gttaaaccag cagaatatga ccaagagggg tcataccctt atttcatagg 1550
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atacttacac ctgcaaagga ataaagatgt gagagtatgt ctccattgtt 1900
cactgtagca tagggataga taagatcctg ctttatttgg acttggcgca 1950
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aagaaggtga taagtgttga aaattaaatg tgataacctt tgaaccttga 2250
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agagtcaaat actgacagat tcgttctaaa tatattgttt ctgtcataaa 2400
attattgtga tttcctgatg agtcatatta ctgtgatttt cataataatg 2450
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tagaagcaac caggcaccat ctgagcaatg ttttctcttg tttgtaatta 2550
tttgtcctt tgaaaattaa atcactatta attacattaa aaatcaaatt 2600
ggataaaaaa aaaaaaaaaa aaa 2623

<210> 285

| 290 | 295 | 300 |
|-------------------------------------|-------------------------|-----|
| Val Pro Glu Arg Trp His Tyr Lys Tyr | Asn Ser Arg Ile Gln Pro | |
| 305 | 310 | 315 |
| Ile Ile Ala Val Ala Asp Glu Gly Trp | His Ile Leu Gln Asn Lys | |
| 320 | 325 | 330 |
| Ser Asp Asp Phe Leu Leu Gly Asn His | Gly Tyr Asp Asn Ala Leu | |
| 335 | 340 | 345 |
| Ala Asp Met His Pro Ile Phe Leu Ala | His Gly Pro Ala Phe Arg | |
| 350 | 355 | 360 |
| Lys Asn Phe Ser Lys Glu Ala Met Asn | Ser Thr Asp Leu Tyr Pro | |
| 365 | 370 | 375 |
| Leu Leu Cys His Leu Leu Asn Ile Thr | Ala Met Pro His Asn Gly | |
| 380 | 385 | 390 |
| Ser Phe Trp Asn Val Gln Asp Leu Leu | Asn Ser Ala Met Pro Arg | |
| 395 | 400 | 405 |
| Val Val Pro Tyr Thr Gln Ser Thr Ile | Leu Leu Pro Gly Ser Val | |
| 410 | 415 | 420 |
| Lys Pro Ala Glu Tyr Asp Gln Glu Gly | Ser Tyr Pro Tyr Phe Ile | |
| 425 | 430 | 435 |
| Gly Val Ser Leu Gly Ser Ile Ile Val | Ile Val Phe Phe Val Ile | |
| 440 | 445 | 450 |
| Phe Ile Lys His Leu Ile His Ser Gln | Ile Pro Ala Leu Gln Asp | |
| 455 | 460 | 465 |
| Met His Ala Glu Ile Ala Gln Pro Leu | Leu Gln Ala | |
| 470 | 475 | |

<210> 286
 <211> 1337
 <212> DNA
 <213> Homo sapiens

<400> 286
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 agggaggtga agaaaccaag acgcagagag gccaagcccc ttgccttggg 150
 tcacacagcc aaaggaggca gagccagaac tcacaaccag atccagaggc 200
 aacagggaca tggccacctg ggacgaaaag gcagtcaccc gcagggccaa 250
 ggtggctccc gctgagagga tgagcaagtt ctttaaggcac ttcacggtcg 300
 tgggagacga ctaccatgcc tggaacatca actacaagaa atggggagaat 350
 gaagaggagg aggaggagga ggagcagcca ccaccacac cagtctcagg 400
 cgaggaaggc agagctgcag cccctgacgt tgcccctgcc cctggccccg 450
 caccagggc ccccttgac ttcaggggca tgttgaggaa actgttcagc 500

tcccacaggt ttcaggtcat catcatctgc ttggtggttc tggatgccct 550
 cctggtgctt gctgagctca tcctggacct gaagatcatc cagcccgaca 600
 agaataacta tgctgccatg gtattccact acatgagcat caccatcttg 650
 gtctttttta tgatggagat catctttaaa ttatttgtct tccgectgag 700
 ttctttcacc acaagtttga gatcctggat gcccgtcgtg gtggtggtct 750
 cattcatcct ggacattgtc ctctgttcc aggagcacca gtttgaggct 800
 ctgggcctgc tgattctgct ccggctgtgg cgggtggccc ggatcatcaa 850
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 agctgctctg agaagcccct ggactgatga gtttgctgta tcaacctgta 1000
 aggagaagct ctctccgat ggctatggga atgaaagaat ccgacttcta 1050
 ctctcacaca gccaccgtga aagtctgga gtaaaatgtg ctgtgtacag 1100
 aagagagaga aggaagcagg ctggcatgtt cactgggctg gtgttacgac 1150
 agagaacctg acagtcactg gccagttatc acttcagatt acaaatacaca 1200
 cagagcatct gcctgttttc aatcacaga gaacaaaacc aaaatctata 1250
 aagatattct gaaaatatga cagaattga caaataaaag cataaacgtg 1300
 taaaaaaaa aaaaaaaaa aaaaaaaaa aaaaaaa 1337

<210> 287
 <211> 255
 <212> PRT
 <213> Homo sapiens

<400> 287
 Met Ala Thr Trp Asp Glu Lys Ala Val Thr Arg Arg Ala Lys Val
 1 5 10 15
 Ala Pro Ala Glu Arg Met Ser Lys Phe Leu Arg His Phe Thr Val
 20 25 30
 Val Gly Asp Asp Tyr His Ala Trp Asn Ile Asn Tyr Lys Lys Trp
 35 40 45
 Glu Asn Glu Glu Glu Glu Glu Glu Glu Gln Pro Pro Pro Thr
 50 55 60
 Pro Val Ser Gly Glu Glu Gly Arg Ala Ala Ala Pro Asp Val Ala
 65 70 75
 Pro Ala Pro Gly Pro Ala Pro Arg Ala Pro Leu Asp Phe Arg Gly
 80 85 90
 Met Leu Arg Lys Leu Phe Ser Ser His Arg Phe Gln Val Ile Ile
 95 100 105
 Ile Cys Leu Val Val Leu Asp Ala Leu Leu Val Leu Ala Glu Leu
 110 115 120

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Leu | Asp | Leu | Lys | Ile | Ile | Gln | Pro | Asp | Lys | Asn | Asn | Tyr | Ala |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ala | Met | Val | Phe | His | Tyr | Met | Ser | Ile | Thr | Ile | Leu | Val | Phe | Phe |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Met | Met | Glu | Ile | Ile | Phe | Lys | Leu | Phe | Val | Phe | Arg | Leu | Ser | Ser |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Phe | Thr | Thr | Ser | Leu | Arg | Ser | Trp | Met | Pro | Val | Val | Val | Val | Val |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Ser | Phe | Ile | Leu | Asp | Ile | Val | Leu | Leu | Phe | Gln | Glu | His | Gln | Phe |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Glu | Ala | Leu | Gly | Leu | Leu | Ile | Leu | Leu | Arg | Leu | Trp | Arg | Val | Ala |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Arg | Ile | Ile | Asn | Gly | Ile | Ile | Ile | Ser | Val | Lys | Thr | Arg | Ser | Glu |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Arg | Gln | Leu | Leu | Arg | Leu | Lys | Gln | Met | Asn | Val | Gln | Leu | Ala | Ala |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Lys | Ile | Gln | His | Leu | Glu | Phe | Ser | Cys | Ser | Glu | Lys | Pro | Leu | Asp |
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<210> 288
 <211> 3334
 <212> DNA
 <213> Homo sapiens

<400> 288
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 cccagaccga gttccagtac tttgagtcga aggggctccc tgccgagctg 150
 aagtcatttt tcaagctcag tgtcttcac cctcccagg aattctccac 200
 ctaccgccag tggaagcaga aaattgtaca agctggagat aaggaccttg 250
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 aagaagctga ggctggtggt taagattttg gacaaaaaga atgatggacg 350
 cattgacgog caggagatca tgcagtcctt gcgggacttg ggagtcaaga 400
 tatctgaaca gcaggcagaa aaaatttctca agagcatgga taaaaacggc 450
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 cgtggaaaac atccccgaga tcattctcta ctggaagcat tccacgatct 550
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 aggacagcgg ggatgtggtg gagacacctg gtggcaggag gtggggcagg 650
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 tgcaggtcca tgctcccgc agcaacaaca tgggcatcgt tgggtggcttc 750

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cacgagaggc ttgtggcagg gtccttggca ggggccatcg cccagagcag 950
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<210> 289
 <211> 469
 <212> PRT
 <213> Homo sapiens

<400> 289
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 20 25 30
 Lys Ser Ile Phe Lys Leu Ser Val Phe Ile Pro Ser Gln Glu Phe
 35 40 45
 Ser Thr Tyr Arg Gln Trp Lys Gln Lys Ile Val Gln Ala Gly Asp
 50 55 60
 Lys Asp Leu Asp Gly Gln Leu Asp Phe Glu Glu Phe Val His Tyr
 65 70 75
 Leu Gln Asp His Glu Lys Lys Leu Arg Leu Val Phe Lys Ile Leu
 80 85 90

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Ala | Gln | Ala | Ser | Ile | Glu | Gly | Ala | Pro | Glu | Val | Thr | Met | Ser |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Ser | Leu | Phe | Lys | His | Ile | Leu | Arg | Thr | Glu | Gly | Ala | Phe | Gly | Leu |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Tyr | Arg | Gly | Leu | Ala | Pro | Asn | Phe | Met | Lys | Val | Ile | Pro | Ala | Val |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Ser | Ile | Ser | Tyr | Val | Val | Tyr | Glu | Asn | Leu | Lys | Ile | Thr | Leu | Gly |
| | | | | 455 | | | | | 460 | | | | | 465 |

Val Gln Ser Arg

<210> 290
 <211> 1658
 <212> DNA
 <213> Homo sapiens

<400> 290
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 atttcaggga gacactccat cacagtcact actgtcgcc cagctgggaa 200
 cattggggag gatggaatcc tgagctgcac ttttgaacct gacatcaaac 250
 tttctgatat cgtgatacaa tggctgaagg aaggtgtttt aggcttggtc 300
 catgagttca aagaaggcaa agatgagctg tcggagcagg atgaaatggt 350
 cagaggccgg acagcagtgt ttgctgatca agtgatagtt ggcaatgcct 400
 ctttgccggct gaaaaacgtg caactcacag atgctggcac ctacaaatgt 450
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 tggagccttc agcatgcgg aagtgaatgt ggactataat gccagctcag 550
 agaccttgcg gtgtgaggct cccgatggt tccccagcc cacagtggtc 600
 tgggcatccc aagttgacca gggagccaac ttctcggaag tctccaatac 650
 cagctttgag ctgaactctg agaatgtgac catgaagggt gtgtctgtgc 700
 tctacaatgt taogatcaac aacacatact cctgtatgat tgaaaatgac 750
 attgccaaag caacagggga tatcaaagt acagaatcgg agatcaaaag 800
 gcggagtcac ctacagctgc taaactcaaa ggcttctctg tgtgtctctt 850
 ctttctttgc catcagctgg gcaattctgc ctctcagccc ttacctgatg 900
 ctaaaataat gtgccttggc caaaaaaag catgcaaagt cattgttaca 950
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agcaagaaac aaaaagaagc caaaagcaga aggtccaat atgaacaaga 1100
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 aattgactgc cacttcgcaa ctgagggcg gctgcatttt agtaatgggt 1450
 caaatgattc actttttatg atgcttccaa aggtgccttg gcttctcttc 1500
 ccaactgaca aatgccaaag ttgagaaaaa tgatcataat tttagcataa 1550
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 ttaaacaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1650
 aaaaaaaaa 1658

<210> 291
 <211> 282
 <212> PRT
 <213> Homo sapiens

<400> 291
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 Ile Ser Gly Arg His Ser Ile Thr Val Thr Thr Val Ala Ser Ala
 35 40 45
 Gly Asn Ile Gly Glu Asp Gly Ile Leu Ser Cys Thr Phe Glu Pro
 50 55 60
 Asp Ile Lys Leu Ser Asp Ile Val Ile Gln Trp Leu Lys Glu Gly
 65 70 75
 Val Leu Gly Leu Val His Glu Phe Lys Glu Gly Lys Asp Glu Leu
 80 85 90
 Ser Glu Gln Asp Glu Met Phe Arg Gly Arg Thr Ala Val Phe Ala
 95 100 105
 Asp Gln Val Ile Val Gly Asn Ala Ser Leu Arg Leu Lys Asn Val
 110 115 120
 Gln Leu Thr Asp Ala Gly Thr Tyr Lys Cys Tyr Ile Ile Thr Ser
 125 130 135
 Lys Gly Lys Gly Asn Ala Asn Leu Glu Tyr Lys Thr Gly Ala Phe
 140 145 150
 Ser Met Pro Glu Val Asn Val Asp Tyr Asn Ala Ser Ser Glu Thr

gcccttgggc catgaagtgc tggcagtgc oggatggacc tagcacttcc 850
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 ctgttcagct gcggggattt agcacaggag actctacgt caccctcagc 1000
 aacctttctg cccagcagc tctcttctg ctaacatctc aggctcccag 1050
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 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 1484

<210> 293
 <211> 180
 <212> PRT
 <213> Homo sapiens

<400> 293
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 20 25 30
 Gly Leu Gln Arg Val His Glu Pro Thr Trp Ala Gln Gln Leu Leu
 35 40 45
 Gln Glu Met Lys Thr Leu Phe Leu Asn Thr Glu Tyr Leu Met Pro
 50 55 60
 Phe Leu Leu Asn Gln Cys Gly Ser Leu Leu Tyr Tyr Leu Thr Leu
 65 70 75
 Ala Ser Thr Asp Leu Thr Leu Ala Val Pro Ile Cys Asn Ser Leu
 80 85 90
 Ala Ile Ile Phe Thr Leu Ile Val Gly Lys Ala Leu Gly Glu Asp
 95 100 105
 Ile Gly Gly Lys Arg Lys Leu Asp Tyr Cys Glu Cys Gly Thr Gln
 110 115 120
 Leu Cys Gly Ser Arg His Thr Cys Val Ser Ser Phe Pro Glu Pro
 125 130 135
 Ile Ser Pro Glu Trp Val Arg Thr Arg Pro Phe Pro Ile Leu Pro
 140 145 150

Phe Pro Leu Gln Leu Phe Cys Phe Leu Val Ala Ile Arg Val Pro
155 160 165

Phe Pro Trp Thr Val Trp Arg Lys Thr Glu Ala Gly Val Trp Asp
170 175 180

<210> 294
<211> 1164
<212> DNA
<213> Homo sapiens

<400> 294
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cggcctaaga tgccacttct tctcatgtcc caggcttgag gccctgtggt 200
ccccatcctt gggagaagtc agctccagca ccatgaaggg catcctcggt 250
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gtccctcaca tgccaacacc agctgtatca gctcctcagc cagctcctct 400
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aagaatgaca ttgagtctaa gagtctcgtg ctgaaaggct gttccaacgt 750
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aaaaaaaaaa aaaa 1164

<210> 295
<211> 237
<212> PRT

<213> Homo sapiens

<400> 295

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20 25 30
Ser Cys Val Asn Ser Ile Ala Ser Glu Cys Pro Ser His Ala Asn
35 40 45
Thr Ser Cys Ile Ser Ser Ser Ala Ser Ser Ser Leu Glu Thr Pro
50 55 60
Val Arg Leu Tyr Gln Asn Met Phe Cys Ser Ala Glu Asn Cys Ser
65 70 75
Glu Glu Thr His Ile Thr Ala Phe Thr Val His Val Ser Ala Glu
80 85 90
Glu His Phe His Phe Val Ser Gln Cys Cys Gln Gly Lys Glu Cys
95 100 105
Ser Asn Thr Ser Asp Ala Leu Asp Pro Pro Leu Lys Asn Val Ser
110 115 120
Ser Asn Ala Glu Cys Pro Ala Cys Tyr Glu Ser Asn Gly Thr Ser
125 130 135
Cys Arg Gly Lys Pro Trp Lys Cys Tyr Glu Glu Glu Gln Cys Val
140 145 150
Phe Leu Val Ala Glu Leu Lys Asn Asp Ile Glu Ser Lys Ser Leu
155 160 165
Val Leu Lys Gly Cys Ser Asn Val Ser Asn Ala Thr Cys Gln Phe
170 175 180
Leu Ser Gly Glu Asn Lys Thr Leu Gly Gly Val Ile Phe Arg Lys
185 190 195
Phe Glu Cys Ala Asn Val Asn Ser Leu Thr Pro Thr Ser Ala Pro
200 205 210
Thr Thr Ser His Asn Val Gly Ser Lys Ala Ser Leu Tyr Leu Leu
215 220 225
Ala Leu Ala Ser Leu Leu Leu Arg Gly Leu Leu Pro
230 235

<210> 296

<211> 1245

<212> DNA

<213> Homo sapiens

<400> 296

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 ggctgccgag ctcttgccg ccacgggtgc caccggcttt agccggtcgt 400
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 ccactagata tttttagtag agaaaaacaa aactggaaaa caca 1245

<210> 297

<211> 341

<212> PRT

<213> Homo sapiens

<400> 297

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Pro | Ala | Ala | Gly | Ala | Leu | Leu | Trp | Val | Leu | Leu | Leu | Asn |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Gly | Pro | Arg | Ala | Ala | Gly | Ala | Gln | Gly | Leu | Thr | Gln | Thr | Pro |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Thr | Glu | Met | Gln | Arg | Val | Ser | Leu | Arg | Phe | Gly | Gly | Pro | Met | Thr |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Arg | Ser | Tyr | Arg | Ser | Thr | Ala | Arg | Thr | Gly | Leu | Pro | Arg | Lys | Thr |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Arg | Ile | Ile | Leu | Glu | Asp | Glu | Asn | Asp | Ala | Met | Ala | Asp | Ala | Asp |

| 65 | | | | | 70 | | | | | 75 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Leu | Ala | Gly | Pro | Ala | Ala | Ala | Glu | Leu | Leu | Ala | Ala | Thr | Val |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ser | Thr | Gly | Phe | Ser | Arg | Ser | Ser | Ala | Ile | Asn | Glu | Glu | Asp | Gly |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ser | Ser | Glu | Glu | Gly | Val | Val | Ile | Asn | Ala | Gly | Lys | Asp | Ser | Thr |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Ser | Arg | Glu | Leu | Pro | Ser | Ala | Thr | Pro | Asn | Thr | Ala | Gly | Ser | Ser |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ser | Thr | Arg | Phe | Ile | Ala | Asn | Ser | Gln | Glu | Pro | Glu | Ile | Arg | Leu |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Thr | Ser | Ser | Leu | Pro | Arg | Ser | Pro | Gly | Arg | Ser | Thr | Glu | Asp | Leu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Pro | Gly | Ser | Gln | Ala | Thr | Leu | Ser | Gln | Trp | Ser | Thr | Pro | Gly | Ser |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Thr | Pro | Ser | Arg | Trp | Pro | Ser | Pro | Ser | Pro | Thr | Ala | Met | Pro | Ser |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Pro | Glu | Asp | Leu | Arg | Leu | Val | Leu | Met | Pro | Trp | Gly | Pro | Trp | His |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Cys | His | Cys | Lys | Ser | Gly | Thr | Met | Ser | Arg | Ser | Arg | Ser | Gly | Lys |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Leu | His | Gly | Leu | Ser | Gly | Arg | Leu | Arg | Val | Gly | Ala | Leu | Ser | Gln |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Leu | Arg | Thr | Glu | His | Lys | Pro | Cys | Thr | Tyr | Gln | Gln | Cys | Pro | Cys |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Asn | Arg | Leu | Arg | Glu | Glu | Cys | Pro | Leu | Asp | Thr | Ser | Leu | Cys | Thr |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Asp | Thr | Asn | Cys | Ala | Ser | Gln | Ser | Thr | Thr | Ser | Thr | Arg | Thr | Thr |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Thr | Thr | Pro | Phe | Pro | Thr | Ile | His | Leu | Arg | Ser | Ser | Pro | Ser | Leu |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Pro | Pro | Ala | Ser | Pro | Cys | Pro | Ala | Leu | Ala | Phe | Trp | Lys | Arg | Val |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Arg | Ile | Gly | Leu | Glu | Asp | Ile | Trp | Asn | Ser | Leu | Ser | Ser | Val | Phe |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Thr | Glu | Met | Gln | Pro | Ile | Asp | Arg | Asn | Gln | Arg | | | | |
| | | | | 335 | | | | | 340 | | | | | |

<210> 298

<211> 2692

<212> DNA

<213> Homo sapiens

<400> 298

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 cgaccgtgag ccggtgtacc gcgactgcgt actgcagtgc gaagagcaga 150
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 atgagtctag caggctggac ctgtcgggac gactgtaagt atgagtgtat 250
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 tcggccgtgg cctcggttct caatggcctg gccagcctgg tgatgctctg 400
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 tggggaggag gaaggggcca tttgaggag aaggggagaa agcttatggc 2300
 tgggtctggt ttcttccctt cccagagggt cttactgttc cagggtggcc 2350
 ccagggcagg cagggggcac actatgcctg tgccctggta aagtgaccc 2400
 ctgccattta ccagcagccc tggcatgttc ctgccccaca ggaatagaat 2450
 ggaggagct ccagaaactt tccatcccaa aggcagtctc cgtggttgaa 2500
 gcagactgga tttttgtct gcccctgacc cttgtccct ctttgaggga 2550
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<210> 299
 <211> 320
 <212> PRT
 <213> Homo sapiens

<400> 299
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 20 25 30
 Asp Cys Val Leu Gln Cys Glu Glu Gln Asn Cys Ser Gly Gly Ala
 35 40 45
 Leu Asn His Phe Arg Ser Arg Gln Pro Ile Tyr Met Ser Leu Ala
 50 55 60
 Gly Trp Thr Cys Arg Asp Asp Cys Lys Tyr Glu Cys Met Trp Val
 65 70 75

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Thr | Val | Gly | Leu | Tyr | Leu | Gln | Glu | Gly | His | Lys | Val | Pro | Gln | Phe | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| His | Gly | Lys | Trp | Pro | Phe | Ser | Arg | Phe | Leu | Phe | Phe | Gln | Glu | Pro | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Ala | Ser | Ala | Val | Ala | Ser | Phe | Leu | Asn | Gly | Leu | Ala | Ser | Leu | Val | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Met | Leu | Cys | Arg | Tyr | Arg | Thr | Phe | Val | Pro | Ala | Ser | Ser | Pro | Met | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Tyr | His | Thr | Cys | Val | Ala | Phe | Ala | Trp | Val | Ser | Leu | Asn | Ala | Trp | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Phe | Trp | Ser | Thr | Val | Phe | His | Thr | Arg | Asp | Thr | Asp | Leu | Thr | Glu | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Lys | Met | Asp | Tyr | Phe | Cys | Ala | Ser | Thr | Val | Ile | Leu | His | Ser | Ile | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Tyr | Leu | Cys | Cys | Val | Arg | Thr | Val | Gly | Leu | Gln | His | Pro | Ala | Val | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Val | Ser | Ala | Phe | Arg | Ala | Leu | Leu | Leu | Leu | Met | Leu | Thr | Val | His | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Val | Ser | Tyr | Leu | Ser | Leu | Ile | Arg | Phe | Asp | Tyr | Gly | Tyr | Asn | Leu | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Val | Ala | Asn | Val | Ala | Ile | Gly | Leu | Val | Asn | Val | Val | Trp | Trp | Leu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Ala | Trp | Cys | Leu | Trp | Asn | Gln | Arg | Arg | Leu | Pro | His | Val | Arg | Lys | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Cys | Val | Val | Val | Val | Leu | Leu | Leu | Gln | Gly | Leu | Ser | Leu | Leu | Glu | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Leu | Leu | Asp | Phe | Pro | Pro | Leu | Phe | Trp | Val | Leu | Asp | Ala | His | Ala | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Ile | Trp | His | Ile | Ser | Thr | Ile | Pro | Val | His | Val | Leu | Phe | Phe | Ser | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Phe | Leu | Glu | Asp | Asp | Ser | Leu | Tyr | Leu | Leu | Lys | Glu | Ser | Glu | Asp | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Lys | Phe | Lys | Leu | Asp | | | | | | | | | | | |
| | | | | 320 | | | | | | | | | | | |

<210> 300

<211> 1674

<212> DNA

<213> Homo sapiens

<400> 300

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cctctgggca tgctgcttgg gctgctgatg gccgcctgct tcaccttctg 150

cctcagtcac cagaacctga aggagtttgc cctgaccaac ccagagaaga 200
gcagcaccaa agaaacggag agaaaagaaa ccaaagccga ggaggagctg 250
gatgccgaag tcctggaggt gttccacccg acgcatgagt ggcaggccct 300
tcagccaggg caggctgtcc ctgcaggatc ccacgtacgg ctgaatcttc 350
agactgggga aagagaggca aaactccaat atgaggacaa gttccgaaat 400
aatttgaaag gcaaaaggct ggatatcaac accaacacct acacatctca 450
ggatctcaag agtgcactgg caaaattcaa ggagggggca gagatggaga 500
gttcaaagga agacaaggca aggcaggctg aggtaaagcg gctcttccgc 550
cccattgagg aactgaagaa agactttgat gagctgaatg ttgtcattga 600
gactgacatg cagatcatgg tacggctgat caacaagttc aatagttcca 650
gctccagttt ggaagagaag attgctgcgc tctttgatct tgaatattat 700
gtccatcaga tggacaatgc gcaggacctg ctttcctttg gtggtcttca 750
agtggtgatc aatgggctga acagcacaga gcccctcgtg aaggagtatg 800
ctgcgtttgt gctgggcgct gccttttcca gcaaccccaa ggtccagggtg 850
gaggccatcg aagggggagc cctgcagaag ctgctggtca tcctggccac 900
ggagcagccg ctcaactgca agaagaaggt cctgtttgca ctgtgctccc 950
tgctgcgcca cttcccctat gccagcggc agttcctgaa gctcgggggg 1000
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cgtgcgcgtg gtcacactgc tctacgacct ggtcacggag aagatgttcg 1100
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cgtcaggacc ccagctcggc caggacactg gccagcctgc aggtgagta 1350
ccaggtgctg gccagcctgg agctgcagga tggtagaggac gagggtact 1400
tccaggagct gctgggctct gtcaacagct tgctgaagga gctgagatga 1450
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ccagcgtggg tgggcttctc aggcaggagg acatcttggc agtgctggct 1550
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aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1650
aaaaaaaaaa aaaaaaaaaa aaaa 1674

<210> 301

| | | | |
|---------------------|-----------------|-------------------------|-----|
| Pro Tyr Ala Gln Arg | Gln Phe Leu Lys | Leu Gly Gly Leu Gln Val | |
| 305 | | 310 | 315 |
| Leu Arg Thr Leu Val | Gln Glu Lys Gly | Thr Glu Val Leu Ala Val | |
| 320 | | 325 | 330 |
| Arg Val Val Thr Leu | Leu Tyr Asp Leu | Val Thr Glu Lys Met Phe | |
| 335 | | 340 | 345 |
| Ala Glu Glu Glu Ala | Glu Leu Thr Gln | Glu Met Ser Pro Glu Lys | |
| 350 | | 355 | 360 |
| Leu Gln Gln Tyr Arg | Gln Val His Leu | Leu Pro Gly Leu Trp Glu | |
| 365 | | 370 | 375 |
| Gln Gly Trp Cys Glu | Ile Thr Ala His | Leu Leu Ala Leu Pro Glu | |
| 380 | | 385 | 390 |
| His Asp Ala Arg Glu | Lys Val Leu Gln | Thr Leu Gly Val Leu Leu | |
| 395 | | 400 | 405 |
| Thr Thr Cys Arg Asp | Arg Tyr Arg Gln | Asp Pro Gln Leu Gly Arg | |
| 410 | | 415 | 420 |
| Thr Leu Ala Ser Leu | Gln Ala Glu Tyr | Gln Val Leu Ala Ser Leu | |
| 425 | | 430 | 435 |
| Glu Leu Gln Asp Gly | Glu Asp Glu Gly | Tyr Phe Gln Glu Leu Leu | |
| 440 | | 445 | 450 |
| Gly Ser Val Asn Ser | Leu Leu Lys Glu | Leu Arg | |
| 455 | | 460 | |

<210> 302
 <211> 2136
 <212> DNA
 <213> Homo sapiens

<400> 302
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 tcgtgggggtc gcgttgccac ccacgcgga ctccccagct ggcgcgcccc 150
 tccattttgc ctgtcctggt caggccccca ccccccttc cacctgacca 200
 gccatggggg ctgcggtgtt tttcggctgc actttcgtcg cgttcggccc 250
 ggccttcgcg cttttcttga tcaactgtggc tggggaccgc cttcgcgtta 300
 tcacctggt cgcaggggca tttttctggc tggctctccct gtccttgccc 350
 tctgtggtct ggttcatctt ggtcatgtg accgaccggt cagatgccc 400
 gctccagtac ggctcctga tttttggtgc tgctgtctct gtccttctac 450
 aggaggtgtt ccgctttgcc tactacaagc tgcttaagaa ggcagatgaa 500
 gggtagcat cgctgagtga ggacggaaga tcacccatct ccatccgcca 550

<210> 303
 <211> 247
 <212> PRT
 <213> Homo sapiens

<400> 303

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Gly | Ala | Ala | Val | Phe | Phe | Gly | Cys | Thr | Phe | Val | Ala | Phe | Gly | 1 | 5 | 10 | 15 |
| Pro | Ala | Phe | Ala | Leu | Phe | Leu | Ile | Thr | Val | Ala | Gly | Asp | Pro | Leu | 20 | 25 | 30 | |
| Arg | Val | Ile | Ile | Leu | Val | Ala | Gly | Ala | Phe | Phe | Trp | Leu | Val | Ser | 35 | 40 | 45 | |
| Leu | Leu | Leu | Ala | Ser | Val | Val | Trp | Phe | Ile | Leu | Val | His | Val | Thr | 50 | 55 | 60 | |
| Asp | Arg | Ser | Asp | Ala | Arg | Leu | Gln | Tyr | Gly | Leu | Leu | Ile | Phe | Gly | 65 | 70 | 75 | |
| Ala | Ala | Val | Ser | Val | Leu | Leu | Gln | Glu | Val | Phe | Arg | Phe | Ala | Tyr | 80 | 85 | 90 | |
| Tyr | Lys | Leu | Leu | Lys | Lys | Ala | Asp | Glu | Gly | Leu | Ala | Ser | Leu | Ser | 95 | 100 | 105 | |
| Glu | Asp | Gly | Arg | Ser | Pro | Ile | Ser | Ile | Arg | Gln | Met | Ala | Tyr | Val | 110 | 115 | 120 | |
| Ser | Gly | Leu | Ser | Phe | Gly | Ile | Ile | Ser | Gly | Val | Phe | Ser | Val | Ile | 125 | 130 | 135 | |
| Asn | Ile | Leu | Ala | Asp | Ala | Leu | Gly | Pro | Gly | Val | Val | Gly | Ile | His | 140 | 145 | 150 | |
| Gly | Asp | Ser | Pro | Tyr | Tyr | Phe | Leu | Thr | Ser | Ala | Phe | Leu | Thr | Ala | 155 | 160 | 165 | |
| Ala | Ile | Ile | Leu | Leu | His | Thr | Phe | Trp | Gly | Val | Val | Phe | Phe | Asp | 170 | 175 | 180 | |
| Ala | Cys | Glu | Arg | Arg | Arg | Tyr | Trp | Ala | Leu | Gly | Leu | Val | Val | Gly | 185 | 190 | 195 | |
| Ser | His | Leu | Leu | Thr | Ser | Gly | Leu | Thr | Phe | Leu | Asn | Pro | Trp | Tyr | 200 | 205 | 210 | |
| Glu | Ala | Ser | Leu | Leu | Pro | Ile | Tyr | Ala | Val | Thr | Val | Ser | Met | Gly | 215 | 220 | 225 | |
| Leu | Trp | Ala | Phe | Ile | Thr | Ala | Gly | Gly | Ser | Leu | Arg | Ser | Ile | Gln | 230 | 235 | 240 | |
| Arg | Ser | Leu | Leu | Cys | Lys | Asp | 245 | | | | | | | | | | | |

<210> 304
 <211> 240
 <212> DNA
 <213> Homo sapiens

<220>

<221> unsure
<222> 108, 123, 126, 154, 198, 206, 217
<223> unknown base

<400> 304
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aagatcaacc catttccatt ccgccagatg gcctatgttt ctggtctctc 100
ccttcggnat catcagtggg gtnttntctg ttatcaatat tttggctgat 150
gcanttgggc caggtgtggg tgggatccat ggagactcac cctattantt 200
cctganttca gccttntga cagcagccat tatcctgctc 240

<210> 305
<211> 378
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 58, 94, 132, 186, 191, 220, 240, 248, 280, 311, 332
<223> unknown base

<400> 305
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ctgctgtntc tgtccttcta caggaggtgt tccgctttgc ctantacaag 100
ctgcttaaga aggcagatga ggggttagca tngctgagtg aggacggaag 150
atcaccatt tccatccgcc agatggccta tgttnttggg ntttccttcg 200
gtatcatcag tgggtgtttt tctgttatca atattttggn tgatgcantt 250
gggccagggtg tgggtgggat ccatggagan tcacctatt aattcctgaa 300
ttcagccttt ntgacagcag ccattatcct gntccatacc ttttggggag 350
ttgtgttttt tgatgcctgt gagaggag 378

<210> 306
<211> 655
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 1, 22, 129, 133, 184
<223> unknown base

<400> 306
ngttggagaa gtggcgcgga cnttcatttg gggtttcggt ttccccctt 50
tccctttccc cggggtctgg ggtgacattg cacgggcccc tcgtgggggc 100
gcgttgccac cccacgcgga ctccccagnt gngcgccct tcccatttgc 150
ctgtcctggt caggccccca ccccccctcc cacntgacca gccatggggg 200
ctgcggtggt tttcggtctg actttcgtcg cgttcggccc ggccttcgcg 250

cttttcttga tcaactgtggc tggggaccgc cttcgcgtta tcatacctggt 300
 cgcaggggca tttttctggc tgggtctccct gctcctggcc tctgtggtct 350
 ggttcatctt ggtccatgtg accgaccggt cagatgcccg gctccagtac 400
 ggcctcctga tttttggtgc tgctgtctct gtccttctac aggaggtggt 450
 ccgctttgcc tactacaagc tgcttaagaa ggcagatgag gggtttagcat 500
 cgctgagtga ggacggaaga tcacccatct ccatccgcc gatggcctat 550
 gtttctggtc tctccttcgg tatcatcagt ggtgtcttct ctgttatcaa 600
 tattttggct gatgcacttg ggccaggtgt ggttgggatc catggagact 650
 ccccc 655

<210> 307
 <211> 650
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 52, 89, 128
 <223> unknown base

<400> 307
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 cgttgccacc ccacgcggac tccccagntg gcgcgccct cccatttgcc 150
 tgtcctggtc agggccccac cccccctccc acctgaccag ccatgggggc 200
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 tcgcaggggc atttttctgg ctgggtctcc tgctcctggc ctctgtggtc 350
 tggttcatct tgggtccatgt gaccgaccgg tcagatgcc ggctccagta 400
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 tcgctgagtg aggacggaag atcaccatc tccatccgcc agatggccta 550
 tgtttctggt ctctccttcg gtatcatcag tgggtgtctt tctgttatca 600
 atattttggc tgatgcactt gggccaggtg tgggtgggat ccatggagac 650

<210> 308
 <211> 1570
 <212> DNA
 <213> Homo sapiens

<400> 308
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gctgggagca aatccccac cccctacctg ggggacaggg caagtgagac 150
ctgggtgaggg tggctcagca ggcaggaag gagagggtgc tgtgcgtcct 200
gcacccacat ctttctctgt cccctccttg ccctgtctgg aggtgtctag 250
actcctatct tctgaattct atagtgcctg ggtctcagcg cagtgccgat 300
gggtggcccg ccttgtggtt cctctctacc tggggaaata aggtgcagcg 350
gccatggcta cagcaagacc cccctggatg tgggtgctct gtgctctgat 400
cacagccttg cttctggggg tcacagagca tgttctcgcc aacaatgatg 450
tttctgtga ccacccctct aacaccgtgc cctctgggag caaccaggac 500
ctgggagctg gggccgggga agacgcccgg tcggatgaca gcagcagccg 550
catcatcaat ggatccgact gcgatatgca caccagccg tggcaggccg 600
cgctgttgc aaggccaac cagctctact gcggggcggt gttggtgcat 650
ccacagtggc tgctcacggc cgcccactgc aggaagaaag ttttcagagt 700
ccgtctcggc cactactccc tgtcaccagt ttatgaatct gggcagcaga 750
tgttccaggg ggtcaaatcc atccccacc ctggctactc ccaccctggc 800
cactctaacg acctcatgct catcaaactg aacagaagaa ttcgtccac 850
taaagatgtc agaccatca acgtctctc tcattgtccc tctgctggga 900
caaagtgtt ggtgtctggc tgggggacaa ccaagagccc ccaagtgcac 950
ttccctaagg tcctocagtg cttgaatata agcgtgctaa gtcagaaaag 1000
gtgcgaggat gcttaccga gacagataga tgacaccatg ttctgcgccg 1050
gtgacaaagc aggtagagac tcctgccagg gtgattctgg ggggcctgtg 1100
gtctgcaatg gctccctgca gggactcgtg tcctggggag attacccttg 1150
tgcccgccc aacagaccgg gtgtctacac gaacctctgc aagttcacca 1200
agtggatcca ggaaaccatc caggccaact cctgagtcac cccaggactc 1250
agcacaccgg catccccacc tgetgcaggg acagccctga cactccttc 1300
agaccctcat tccttcccag agatgttgag aatgttcac tctccagccc 1350
ctgaccccat gtctcctgga ctcagggtct gcttcccca cattgggctg 1400
accgtgtctc tctagttgaa ccctgggaac aatttccaaa actgtccagg 1450
gcgggggttg cgtctcaatc tcctggggc actttcatcc tcaagctcag 1500
ggcccatccc ttctctgcag ctctgaccca aatttagtcc cagaaataaa 1550
ctgagaagtg gaaaaaaaaa 1570

<210> 309

<211> 293
 <212> PRT
 <213> Homo sapiens

<400> 309

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Thr | Ala | Arg | Pro | Pro | Trp | Met | Trp | Val | Leu | Cys | Ala | Leu | 1 | 5 | 10 | 15 |
| Ile | Thr | Ala | Leu | Leu | Leu | Gly | Val | Thr | Glu | His | Val | Leu | Ala | Asn | 20 | 25 | 30 | |
| Asn | Asp | Val | Ser | Cys | Asp | His | Pro | Ser | Asn | Thr | Val | Pro | Ser | Gly | 35 | 40 | 45 | |
| Ser | Asn | Gln | Asp | Leu | Gly | Ala | Gly | Ala | Gly | Glu | Asp | Ala | Arg | Ser | 50 | 55 | 60 | |
| Asp | Asp | Ser | Ser | Ser | Arg | Ile | Ile | Asn | Gly | Ser | Asp | Cys | Asp | Met | 65 | 70 | 75 | |
| His | Thr | Gln | Pro | Trp | Gln | Ala | Ala | Leu | Leu | Leu | Arg | Pro | Asn | Gln | 80 | 85 | 90 | |
| Leu | Tyr | Cys | Gly | Ala | Val | Leu | Val | His | Pro | Gln | Trp | Leu | Leu | Thr | 95 | 100 | 105 | |
| Ala | Ala | His | Cys | Arg | Lys | Lys | Val | Phe | Arg | Val | Arg | Leu | Gly | His | 110 | 115 | 120 | |
| Tyr | Ser | Leu | Ser | Pro | Val | Tyr | Glu | Ser | Gly | Gln | Gln | Met | Phe | Gln | 125 | 130 | 135 | |
| Gly | Val | Lys | Ser | Ile | Pro | His | Pro | Gly | Tyr | Ser | His | Pro | Gly | His | 140 | 145 | 150 | |
| Ser | Asn | Asp | Leu | Met | Leu | Ile | Lys | Leu | Asn | Arg | Arg | Ile | Arg | Pro | 155 | 160 | 165 | |
| Thr | Lys | Asp | Val | Arg | Pro | Ile | Asn | Val | Ser | Ser | His | Cys | Pro | Ser | 170 | 175 | 180 | |
| Ala | Gly | Thr | Lys | Cys | Leu | Val | Ser | Gly | Trp | Gly | Thr | Thr | Lys | Ser | 185 | 190 | 195 | |
| Pro | Gln | Val | His | Phe | Pro | Lys | Val | Leu | Gln | Cys | Leu | Asn | Ile | Ser | 200 | 205 | 210 | |
| Val | Leu | Ser | Gln | Lys | Arg | Cys | Glu | Asp | Ala | Tyr | Pro | Arg | Gln | Ile | 215 | 220 | 225 | |
| Asp | Asp | Thr | Met | Phe | Cys | Ala | Gly | Asp | Lys | Ala | Gly | Arg | Asp | Ser | 230 | 235 | 240 | |
| Cys | Gln | Gly | Asp | Ser | Gly | Gly | Pro | Val | Val | Cys | Asn | Gly | Ser | Leu | 245 | 250 | 255 | |
| Gln | Gly | Leu | Val | Ser | Trp | Gly | Asp | Tyr | Pro | Cys | Ala | Arg | Pro | Asn | 260 | 265 | 270 | |
| Arg | Pro | Gly | Val | Tyr | Thr | Asn | Leu | Cys | Lys | Phe | Thr | Lys | Trp | Ile | 275 | 280 | 285 | |
| Gln | Glu | Thr | Ile | Gln | Ala | Asn | Ser | | | | | | | | | | | |

<210> .310
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 310
 tcctgtgacc acccctctaa cacc 24

<210> 311
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 311
 ctggaacatc tgctgcccag attc 24

<210> 312
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 312
 gtcgcatgac agcagcagcc gcatcatcaa tggatccgac tgcgatatgc 50

<210> 313
 <211> 3010
 <212> DNA
 <213> Homo sapiens

<400> 313
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 ccggccgcgc gacaagccgc agcggccgag ctgcggctac gtgctgtgca 100
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 gtgctcttcc tgaaccacgc ccacgcgcgc ggcacggcgc cccacactgt 200
 cgtcagcact ggggctgcca gcgccaacag cgccctggtc actgtggaaa 250
 gggcggacag ctgcacctc agcatcctca ttgaaccgcg ctgccccgac 300
 ctcaccgaca gcttcgcacg cctggagagc gccaggcct cggtgctgca 350
 ggcgctgaca gagcaccagg ccagccacg gctggtgggc gaccaggagc 400
 aggagctgct ggacacgctg gccgaccagc tgccccggct gctggcccga 450
 gcctcagagc tgcagacgga gtgcatgggg ctgcggaagg ggcattggcac 500
 gctgggccag gccctcagcg ccctgcagag tgagcagggc cgcctcatcc 550

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 caacaaggcc gaccttcaga gagcgctgc ccggggaacc cggccccggg 700
 gctgtgccac tggctcccgg ccccgagact gtctggacgt cctcctaagc 750
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 cggcttcag gtgtactgtg acatgcgcac ggacggcggc ggctggacgg 850
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 gtttgtgctt aaaaaacaat aaatttgact tggcaccact gggggttgg 2950
 gggagaggcc gtgtgacctg gctctctgtc ccagtgccac caggtcatcc 3000
 acatgcgcag 3010

<210> 314

<211> 461

<212> PRT

<213> Homo sapiens

<400> 314

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Asn | Asp | Arg | Trp | Lys | Thr | Met | Gly | Gly | Ala | Ala | Gln | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Glu | Asp | Arg | Pro | Arg | Asp | Lys | Pro | Gln | Arg | Pro | Ser | Cys | Gly | Tyr |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Val | Leu | Cys | Thr | Val | Leu | Leu | Ala | Leu | Ala | Val | Leu | Leu | Ala | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Ala | Val | Thr | Gly | Ala | Val | Leu | Phe | Leu | Asn | His | Ala | His | Ala | Pro |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Gly | Thr | Ala | Pro | Pro | Pro | Val | Val | Ser | Thr | Gly | Ala | Ala | Ser | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Asn | Ser | Ala | Leu | Val | Thr | Val | Glu | Arg | Ala | Asp | Ser | Ser | His | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ser | Ile | Leu | Ile | Asp | Pro | Arg | Cys | Pro | Asp | Leu | Thr | Asp | Ser | Phe |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | |
|-----------------|---------------------|-------------------------|
| Ala Arg Leu Glu | Ser Ala Gln Ala Ser | Val Leu Gln Ala Leu Thr |
| 110 | 115 | 120 |
| Glu His Gln Ala | Gln Pro Arg Leu Val | Gly Asp Gln Glu Gln Glu |
| 125 | 130 | 135 |
| Leu Leu Asp Thr | Leu Ala Asp Gln Leu | Pro Arg Leu Leu Ala Arg |
| 140 | 145 | 150 |
| Ala Ser Glu Leu | Gln Thr Glu Cys Met | Gly Leu Arg Lys Gly His |
| 155 | 160 | 165 |
| Gly Thr Leu Gly | Gln Gly Leu Ser Ala | Leu Gln Ser Glu Gln Gly |
| 170 | 175 | 180 |
| Arg Leu Ile Gln | Leu Leu Ser Glu Ser | Gln Gly His Met Ala His |
| 185 | 190 | 195 |
| Leu Val Asn Ser | Val Ser Asp Ile Leu | Asp Ala Leu Gln Arg Asp |
| 200 | 205 | 210 |
| Arg Gly Leu Gly | Arg Pro Arg Asn Lys | Ala Asp Leu Gln Arg Ala |
| 215 | 220 | 225 |
| Pro Ala Arg Gly | Thr Arg Pro Arg Gly | Cys Ala Thr Gly Ser Arg |
| 230 | 235 | 240 |
| Pro Arg Asp Cys | Leu Asp Val Leu Leu | Ser Gly Gln Gln Asp Asp |
| 245 | 250 | 255 |
| Gly Val Tyr Ser | Val Phe Pro Thr His | Tyr Pro Ala Gly Phe Gln |
| 260 | 265 | 270 |
| Val Tyr Cys Asp | Met Arg Thr Asp Gly | Gly Gly Trp Thr Val Phe |
| 275 | 280 | 285 |
| Gln Arg Arg Glu | Asp Gly Ser Val Asn | Phe Phe Arg Gly Trp Asp |
| 290 | 295 | 300 |
| Ala Tyr Arg Asp | Gly Phe Gly Arg Leu | Thr Gly Glu His Trp Leu |
| 305 | 310 | 315 |
| Gly Leu Lys Arg | Ile His Ala Leu Thr | Thr Gln Ala Ala Tyr Glu |
| 320 | 325 | 330 |
| Leu His Val Asp | Leu Glu Asp Phe Glu | Asn Gly Thr Ala Tyr Ala |
| 335 | 340 | 345 |
| Arg Tyr Gly Ser | Phe Gly Val Gly Leu | Phe Ser Val Asp Pro Glu |
| 350 | 355 | 360 |
| Glu Asp Gly Tyr | Pro Leu Thr Val Ala | Asp Tyr Ser Gly Thr Ala |
| 365 | 370 | 375 |
| Gly Asp Ser Leu | Leu Lys His Ser Gly | Met Arg Phe Thr Thr Lys |
| 380 | 385 | 390 |
| Asp Arg Asp Ser | Asp His Ser Glu Asn | Asn Cys Ala Ala Phe Tyr |
| 395 | 400 | 405 |
| Arg Gly Ala Trp | Trp Tyr Arg Asn Cys | His Thr Ser Asn Leu Asn |
| 410 | 415 | 420 |

Gly Gln Tyr Leu Arg Gly Ala His Ala Ser Tyr Ala Asp Gly Val
425 430 435

Glu Trp Ser Ser Trp Thr Gly Trp Gln Tyr Ser Leu Lys Phe Ser
440 445 450

Glu Met Lys Ile Arg Pro Val Arg Glu Asp Arg
455 460

<210> 315
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 315
cacacgtcca acctcaatgg gcag 24

<210> 316
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 316
gaccagcagg gcccaaggaca agg 23

<210> 317
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 317
gttctctgag atgaagatcc ggccgggtccg ggagtaccgc ttag 44

<210> 318
<211> 1841
<212> DNA
<213> Homo sapiens

<400> 318
gcagtcagag acttcccctg cccctcgctg ggaaagaaca ttaggaatgc 50
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ggcaatccga ccacatttca ctctaccgc tgtaggaatc cagatgcagg 150
ccaagtacag cagcacgagg gacatgctgg atgatgatgg ggacaccacc 200
atgagcctgc attctcaagc ctctgccaca actcggcatc cagagccccg 250
gcgcacagag cacagggctc cctcttcaac gtggcgacca gtggccctga 300
ccctgctgac tttgtgcttg gtgctgctga tagggctggc agccctgggg 350
cttttgtttt ttcagtacta ccagctctcc aatactggtc aagacaccat 400

ttctcaaagt gaagaaagat taggaaatac gtcccaagag ttgcaatctc 450
 ttcaagtcca gaatataaag cttgcaggaa gtctgcagca tgtggctgaa 500
 aaactctgtc gtgagctgta taacaaagct ggagcacaca ggtgcagccc 550
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 aagacagcaa aagttgggag gactgtaaat atttctgcct tagtgaaaac 650
 tctaccatgc tgaagataaa caaacaagaa gacctggaat ttgccgcgtc 700
 tcagagctac totgagtttt tctactctta ttggacaggg cttttgcgcc 750
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 gaactgttcc atattataat agatgtcacc agcccaagaa gcagagactg 850
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 agcgttgtgt ctgtgagaga agggcaggaa tggatgaagcc agagagcctc 950
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 ctacaaatag cagagtgagc caggcgggtgc caaagcaagg gctagttag 1050
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 aaaatgggtt ctcgtgtttc ctgttcaggaa tcaccagcat ttctgagctt 1150
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 caaccaacct cagaaacca taatgtcatc tgccttcttg gcttagagat 1250
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 aatctcaaat ctcaatgcct tataagcatt ccttctgtg tccattaaga 1600
 ctctgataat tgtctccctt ccataggaat ttctcccagg aaagaaatat 1650
 atcccatct ccgtttcata tcagaactac cgtcccgat attcccttca 1700
 gagagattaa agaccagaaa aaagtgaagc tcttcatctg cacctgtaat 1750
 agtttcagtt cctattttct tccattgacc catatttata cttttcaggt 1800
 actgaagatt taataataat aaatgtaaat actgtgaaaa a 1841

<210> 319
 <211> 280
 <212> PRT
 <213> Homo sapiens

<400> 319

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gln | Ala | Lys | Tyr | Ser | Ser | Thr | Arg | Asp | Met | Leu | Asp | Asp | Asp |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gly | Asp | Thr | Thr | Met | Ser | Leu | His | Ser | Gln | Ala | Ser | Ala | Thr | Thr |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Arg | His | Pro | Glu | Pro | Arg | Arg | Thr | Glu | His | Arg | Ala | Pro | Ser | Ser |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Thr | Trp | Arg | Pro | Val | Ala | Leu | Thr | Leu | Leu | Thr | Leu | Cys | Leu | Val |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Leu | Ile | Gly | Leu | Ala | Ala | Leu | Gly | Leu | Leu | Phe | Phe | Gln | Tyr |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Tyr | Gln | Leu | Ser | Asn | Thr | Gly | Gln | Asp | Thr | Ile | Ser | Gln | Met | Glu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Glu | Arg | Leu | Gly | Asn | Thr | Ser | Gln | Glu | Leu | Gln | Ser | Leu | Gln | Val |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gln | Asn | Ile | Lys | Leu | Ala | Gly | Ser | Leu | Gln | His | Val | Ala | Glu | Lys |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Leu | Cys | Arg | Glu | Leu | Tyr | Asn | Lys | Ala | Gly | Ala | His | Arg | Cys | Ser |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Pro | Cys | Thr | Glu | Gln | Trp | Lys | Trp | His | Gly | Asp | Asn | Cys | Tyr | Gln |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Phe | Tyr | Lys | Asp | Ser | Lys | Ser | Trp | Glu | Asp | Cys | Lys | Tyr | Phe | Cys |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Leu | Ser | Glu | Asn | Ser | Thr | Met | Leu | Lys | Ile | Asn | Lys | Gln | Glu | Asp |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Leu | Glu | Phe | Ala | Ala | Ser | Gln | Ser | Tyr | Ser | Glu | Phe | Phe | Tyr | Ser |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Tyr | Trp | Thr | Gly | Leu | Leu | Arg | Pro | Asp | Ser | Gly | Lys | Ala | Trp | Leu |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Trp | Met | Asp | Gly | Thr | Pro | Phe | Thr | Ser | Glu | Leu | Phe | His | Ile | Ile |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ile | Asp | Val | Thr | Ser | Pro | Arg | Ser | Arg | Asp | Cys | Val | Ala | Ile | Leu |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Asn | Gly | Met | Ile | Phe | Ser | Lys | Asp | Cys | Lys | Glu | Leu | Lys | Arg | Cys |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Val | Cys | Glu | Arg | Arg | Ala | Gly | Met | Val | Lys | Pro | Glu | Ser | Leu | His |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Val | Pro | Pro | Glu | Thr | Leu | Gly | Glu | Gly | Asp | | | | | |
| | | | | 275 | | | | | 280 | | | | | |

<210> 320

<211> 468

<212> DNA

<213> Homo sapiens

<220>
<221> unsure
<222> 59, 95, 149, 331, 364, 438, 446
<223> unknown base

<400> 320
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gggacatgnt ggatgatgat gggacaccac catgagcctg cattntcaag 100
cttttgccac aattcggcat ccagagcccc ggcgcacaga gcacagggnt 150
cctttttcaa cgtggcgacc agtggccctg accctgctga ctttgtgctt 200
gggtgctgctg atagggctgg cagccctggg gcttttgttt tttcagtact 250
accagctctc caatactggg caagacacca tttctcaa at ggaagaaaga 300
ttaggaaata cgtcccaaga gttgcaattt nttcaagtcc agaataataa 350
gcttgcagga agtntgcagc atgtggctga aaaactctgt cgtgagctgt 400
ataacaaagc tggaggaact ttgaaggagg gcaaagtntc ctcatntact 450
atacacacac cacttccc 468

<210> 321
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 321
atgcaggcca agtacagcag cac 23

<210> 322
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 322
catgctgacg acttcctgca agc 23

<210> 323
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 323
ccacacagtc tctgcttctt ggg 23

<210> 324
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 324
atgctggatg atgatgggga caccacatg agcctgcatt 40

<210> 325
<211> 2988
<212> DNA
<213> Homo sapiens

<400> 325
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gaggcgcggc tccggggatt cggctcgggc cgctggctct gctctgcggg 100
gagggagcgg gcccgcgcgc ggggcccag cctccggat ccgccccctc 150
cccggctccc cccctcogga gactcctctg gctgctctgg gggttcgccg 200
gggcccggga cccgcggtcc gggcgccatg cgggcatcgc tgctgctgtc 250
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ccgcccacac ctggagactc tgagctgccg ccgcgcggca acaccaacgc 400
ggcgcgccgg cccaactcgg tgcagcccgg agcggagcgc gagaagcccg 450
gggcccggca aggcgcccgg gagaattggg agccgcgcgt cttgccctac 500
caccctgcac agcccggcca ggccgcaaaa aaggccgtca ggaccgccta 550
catcagcacg gagctgggca tcaggcagag gctgctggtg gcggtgctga 600
cctctcagac cacgctgccc acgctgggcg tggccgtgaa ccgcacgctg 650
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gacacctgca cctggcgtg cgccacctgc tggagcagca cggcgacgac 800
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tactgccacg gaggttttg ggtgctgctg tcgcgcatgc tgctgcaaca 1000
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accctgtgcg tgaccctgtg cacatgtacc agctgcacaa agctttcgcc 1250
cgagctgaac tggaacgcac gtaccaggag atccaggagt tacagtggga 1300

| | | | |
|-----------------|---------------------|---------------------|-----|
| Val Ser Ala Arg | Pro Asp Glu Trp Leu | Gly Arg Cys Ile Leu | Asp |
| | 275 | 280 | 285 |
| Ala Thr Gly Val | Gly Cys Thr Gly Asp | His Glu Gly Val His | Tyr |
| | 290 | 295 | 300 |
| Ser His Leu Glu | Leu Ser Pro Gly Glu | Pro Val Gln Glu Gly | Asp |
| | 305 | 310 | 315 |
| Pro His Phe Arg | Ser Ala Leu Thr Ala | His Pro Val Arg Asp | Pro |
| | 320 | 325 | 330 |
| Val His Met Tyr | Gln Leu His Lys Ala | Phe Ala Arg Ala Glu | Leu |
| | 335 | 340 | 345 |
| Glu Arg Thr Tyr | Gln Glu Ile Gln Glu | Leu Gln Trp Glu Ile | Gln |
| | 350 | 355 | 360 |
| Asn Thr Ser His | Leu Ala Val Asp Gly | Asp Arg Ala Ala Ala | Trp |
| | 365 | 370 | 375 |
| Pro Val Gly Ile | Pro Ala Pro Ser Arg | Pro Ala Ser Arg Phe | Glu |
| | 380 | 385 | 390 |
| Val Leu Arg Trp | Asp Tyr Phe Thr Glu | Gln His Ala Phe Ser | Cys |
| | 395 | 400 | 405 |
| Ala Asp Gly Ser | Pro Arg Cys Pro Leu | Arg Gly Ala Asp Arg | Ala |
| | 410 | 415 | 420 |
| Asp Val Ala Asp | Val Leu Gly Thr Ala | Leu Glu Glu Leu Asn | Arg |
| | 425 | 430 | 435 |
| Arg Tyr His Pro | Ala Leu Arg Leu Gln | Lys Gln Gln Leu Val | Asn |
| | 440 | 445 | 450 |
| Gly Tyr Arg Arg | Phe Asp Pro Ala Arg | Gly Met Glu Tyr Thr | Leu |
| | 455 | 460 | 465 |
| Asp Leu Gln Leu | Glu Ala Leu Thr Pro | Gln Gly Gly Arg Arg | Pro |
| | 470 | 475 | 480 |
| Leu Thr Arg Arg | Val Gln Leu Leu Arg | Pro Leu Ser Arg Val | Glu |
| | 485 | 490 | 495 |
| Ile Leu Pro Val | Pro Tyr Val Thr Glu | Ala Ser Arg Leu Thr | Val |
| | 500 | 505 | 510 |
| Leu Leu Pro Leu | Ala Ala Ala Glu Arg | Asp Leu Ala Pro Gly | Phe |
| | 515 | 520 | 525 |
| Leu Glu Ala Phe | Ala Thr Ala Ala Leu | Glu Pro Gly Asp Ala | Ala |
| | 530 | 535 | 540 |
| Ala Ala Leu Thr | Leu Leu Leu Leu Tyr | Glu Pro Arg Gln Ala | Gln |
| | 545 | 550 | 555 |
| Arg Val Ala His | Ala Asp Val Phe Ala | Pro Val Lys Ala His | Val |
| | 560 | 565 | 570 |
| Ala Glu Leu Glu | Arg Arg Phe Pro Gly | Ala Arg Val Pro Trp | Leu |
| | 575 | 580 | 585 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Val | Gln | Thr | Ala | Ala | Pro | Ser | Pro | Leu | Arg | Leu | Met | Asp | Leu |
| | | | | 590 | | | | | 595 | | | | | 600 |
| Leu | Ser | Lys | Lys | His | Pro | Leu | Asp | Thr | Leu | Phe | Leu | Leu | Ala | Gly |
| | | | | 605 | | | | | 610 | | | | | 615 |
| Pro | Asp | Thr | Val | Leu | Thr | Pro | Asp | Phe | Leu | Asn | Arg | Cys | Arg | Met |
| | | | | 620 | | | | | 625 | | | | | 630 |
| His | Ala | Ile | Ser | Gly | Trp | Gln | Ala | Phe | Phe | Pro | Met | His | Phe | Gln |
| | | | | 635 | | | | | 640 | | | | | 645 |
| Ala | Phe | His | Pro | Gly | Val | Ala | Pro | Pro | Gln | Gly | Pro | Gly | Pro | Pro |
| | | | | 650 | | | | | 655 | | | | | 660 |
| Glu | Leu | Gly | Arg | Asp | Thr | Gly | Arg | Phe | Asp | Arg | Gln | Ala | Ala | Ser |
| | | | | 665 | | | | | 670 | | | | | 675 |
| Glu | Ala | Cys | Phe | Tyr | Asn | Ser | Asp | Tyr | Val | Ala | Ala | Arg | Gly | Arg |
| | | | | 680 | | | | | 685 | | | | | 690 |
| Leu | Ala | Ala | Ala | Ser | Glu | Gln | Glu | Glu | Glu | Leu | Leu | Glu | Ser | Leu |
| | | | | 695 | | | | | 700 | | | | | 705 |
| Asp | Val | Tyr | Glu | Leu | Phe | Leu | His | Phe | Ser | Ser | Leu | His | Val | Leu |
| | | | | 710 | | | | | 715 | | | | | 720 |
| Arg | Ala | Val | Glu | Pro | Ala | Leu | Leu | Gln | Arg | Tyr | Arg | Ala | Gln | Thr |
| | | | | 725 | | | | | 730 | | | | | 735 |
| Cys | Ser | Ala | Arg | Leu | Ser | Glu | Asp | Leu | Tyr | His | Arg | Cys | Leu | Gln |
| | | | | 740 | | | | | 745 | | | | | 750 |
| Ser | Val | Leu | Glu | Gly | Leu | Gly | Ser | Arg | Thr | Gln | Leu | Ala | Met | Leu |
| | | | | 755 | | | | | 760 | | | | | 765 |
| Leu | Phe | Glu | Gln | Glu | Gln | Gly | Asn | Ser | Thr | | | | | |
| | | | | 770 | | | | | 775 | | | | | |

<210> 327

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 327

tggaaggctg ccgcaacgac aatc 24

<210> 328

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 328

ctgatgtggc cgatgttctg 20

<210> 329

<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 329
atggctcagt gtgcagacag 20

<210> 330
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 330
gcatgctgct ccgtgaagta gtcc 24

<210> 331
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 331
atgcatggga aagaaggcct gccc 24

<210> 332
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 332
tgacttggtg accacgaggg ggtgcactat agccatctgg agctgag 47

<210> 333
<211> 1095
<212> DNA
<213> Homo sapiens

<400> 333
gctctggccg gccccggcga ttggtcaccg cccgctaggg gacagccctg 50
gcctcctctg attggcaagc gctggccacc tccccacacc ccttgcgaa 100
gctcccctag tggagaaaag gagtagctat tagccaattc ggcagggcc 150
gctttttaga agcttgattt cctttgaaga tgaaagacta gcggaagctc 200
tgctctttc ccagtgggc gagggaaactc ggggcgattg gctgggaact 250
gtatccaccc aaatgtcacc gatttcttcc tatgcaggaa atgagcagac 300
ccatcaataa gaaatttctc agcctggccg aaaatggttg gccccacgaa 350
gccacgacaa ctggaggcaa agagggttgc tcaacgcccc gcctcattgg 400

aaaaccaa at cagatctggg acctatatag cgtggcggag gcggggcgat 450
 gattgtcgcg ctgcaccca ctgcagctgc gcacagtcgc atttctttcc 500
 ccgccccga gacctgcag caccatctgt catggcggct gggctgtttg 550
 gtttgagcgc tcgcctgtt ttggcggcag cggcgacgcg agggctccc 600
 gccgcccgcg tccgctggga atctagcttc tccaggactg tggtcgcccc 650
 gtccgctgtg gggggaaagc ggccccaga accgaccaca ccgtggcaag 700
 aggaccacga acccgaggac gaaaacttgt atgagaagaa cccagactcc 750
 catggttatg acaaggaccc cgttttggac gtctggaaca tgcgacttgt 800
 cttcttcttt ggcgctctca tcatcctggt ccttggcagc acctttgtgg 850
 cctatctgcc tgactacagg atgaaagagt ggtcccgcgc cgaagctgag 900
 aggccttgta aataccgaga ggccaatggc cttcccatca tggaatccaa 950
 ctgcttcgac ccagcaaga tccagctgcc agaggatgag tgaccagttg 1000
 ctaagtgggg ctcaagaagc accgccttcc ccaccccctg cctgccattc 1050
 tgacctcttc tcagagcacc taattaaagg ggctgaaagt ctgaa 1095

<210> 334

<211> 153

<212> PRT

<213> Homo sapiens

<400> 334

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Ala | Gly | Leu | Phe | Gly | Leu | Ser | Ala | Arg | Arg | Leu | Leu | Ala | 1 | 5 | 10 | 15 |
| Ala | Ala | Ala | Thr | Arg | Gly | Leu | Pro | Ala | Ala | Arg | Val | Arg | Trp | Glu | 20 | 25 | 30 | |
| Ser | Ser | Phe | Ser | Arg | Thr | Val | Val | Ala | Pro | Ser | Ala | Val | Ala | Gly | 35 | 40 | 45 | |
| Lys | Arg | Pro | Pro | Glu | Pro | Thr | Thr | Pro | Trp | Gln | Glu | Asp | Pro | Glu | 50 | 55 | 60 | |
| Pro | Glu | Asp | Glu | Asn | Leu | Tyr | Glu | Lys | Asn | Pro | Asp | Ser | His | Gly | 65 | 70 | 75 | |
| Tyr | Asp | Lys | Asp | Pro | Val | Leu | Asp | Val | Trp | Asn | Met | Arg | Leu | Val | 80 | 85 | 90 | |
| Phe | Phe | Phe | Gly | Val | Ser | Ile | Ile | Leu | Val | Leu | Gly | Ser | Thr | Phe | 95 | 100 | 105 | |
| Val | Ala | Tyr | Leu | Pro | Asp | Tyr | Arg | Met | Lys | Glu | Trp | Ser | Arg | Arg | 110 | 115 | 120 | |
| Glu | Ala | Glu | Arg | Leu | Val | Lys | Tyr | Arg | Glu | Ala | Asn | Gly | Leu | Pro | 125 | 130 | 135 | |
| Ile | Met | Glu | Ser | Asn | Cys | Phe | Asp | Pro | Ser | Lys | Ile | Gln | Leu | Pro | 140 | 145 | 150 | |

Glu Asp Glu

<210> 335
<211> 442
<212> DNA
<213> Homo sapiens

<400> 335
ggcggctggg ctgtttggtt tgagcgctcg ccgtcttttg gcggcagcgg 50
cgacgcgagg gctcccggcc gcccgctcc gctgggaatc tagcttctcc 100
aggactgtgg tcgccccgtc cgctgtggcg ggaaagcggc cccagaacc 150
gaccacaccg tggcaagagg acccagaacc cgaggacgaa aacttgatg 200
agaagaacc agactcccat ggttatgaca aggaccccg tttggacgtc 250
tggaacatgc gacttgctt cttctttggc gtctccatca tcctggtcct 300
tggcagcacc tttgtggcct atctgcctga ctacaggatg aaagagtgg 350
cccgcgcga agctgagagg cttgtgaaat accgagaggc caatggcctt 400
cccatcatgg aatccaactg cttcgacccc agcaagatcc ag 442

<210> 336
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 336
ctgagaccct gcagcaccat ctg 23

<210> 337
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 337
ggtgcttctt gagccccact tagc 24

<210> 338
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 338
aatctagctt ctccaggact gtggtcgccc cgtccgctgt 40

<210> 339
<211> 2162
<212> DNA

<213> Homo sapiens

<400> 339

gcggcggtta tgccgcttgc tctgctcgtc ctgttgctcc tggggcccg 50
cggctggtgc cttgcagaac cccacgcga cagcctgcgg gaggaacttg 100
tcataccccc gctgccttcc ggggacgtag ccgccacatt ccagttccgc 150
acgcgctggg attcggagct tcagcgggaa ggagtgtccc attacaggct 200
ctttcccaaa gccctggggc agctgatctc caagtattct ctacgggagc 250
tgcacctgtc attcacacaa ggcttttga ggacccgata ctgggggcca 300
cccttcctgc agggcccatc aggtgcagag ctgtgggtct ggttccaaga 350
cactgtcact gatgtggata aatcttggaa ggagctcagt aatgtcctct 400
cagggatctt ctgcgcctct ctcaacttca tcgactccac caacacagtc 450
actccactg cctccttcaa acccctgggt ctggccaatg aactgacca 500
ctactttctg cgctatgctg tgctgccgcg ggaggtggtc tgcaccgaaa 550
aactacccc ctggaagaag ctcttgccct gtagttccaa ggcaggcctc 600
tctgtgctgc tgaaggcaga tcgcttggtc cacaccagct accactcca 650
ggcagtgcac atccgcctg tttgcagaaa tgcacgctgt actagcatct 700
cctgggagct gaggcagacc ctgtcagttg tatttgatgc cttcatcacg 750
gggcagggaa agaaagactg gtccctcttc cggatgttct cccgaaccct 800
caeggagccc tgccccctgg cttcagagag ccgagtctat gtggacatca 850
ccacctaaa ccaggacaac gagacattag aggtgcaccc acccccgacc 900
actacatata aggacgtcat cctaggcact cggaagacct atgccatcta 950
tgacttgctt gacaccgcca tgatcaaaa ctctcgaaac ctcaacatcc 1000
agctcaagtg gaagagaccc ccagagaatg agggccccc agtgcccttc 1050
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gagcacactg ctgtacaaca cccaccata ccgggccttc ccggtgctgc 1150
tgctggacac cgtaccctg tatctgggc tgtatgtgca caccctcacc 1200
atcacctcca agggcaagga gaacaaacca agttacatcc actaccagcc 1250
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cggccaactc agtcaccaag gtttccatcc agtttgagcg ggcgctgctg 1350
aagtggaccg agtacacgcc agatcctaac catggcttct atgtcagccc 1400
atctgtcctc agcgccttg tgcccagcat ggtagcagcc aagccagtgg 1450
actggaaga gagtcccctc ttcaacagcc tgttcccagt ctctgatggc 1500

tctaactact ttgtgcggct ctacacggag ccgctgctgg tgaacctgcc 1550
gacaccggac ttcagcatgc cctacaacgt gatctgcoctc acgtgcactg 1600
tggtggccgt gtgctacggc tccttctaca atctoctcac ccgaaccttc 1650
cacatcgagg agccccgcac aggtggcctg gccaagcggc tggccaacct 1700
tatccggcgc gcccgaggtg tccccccact ctgattcttg ccctttccag 1750
cagctgcagc tgccgtttct ctctggggag gggagcccaa gggctgtttc 1800
tgccacttgc tctcctcaga gttggctttt gaaccaaagt gccctggacc 1850
aggtcagggc ctacagctgt gttgtccagt acaggagcca cgagccaaat 1900
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ggccacctct atattgaggt gctcaataag caaaagtggc cgggtggctgc 2000
tgtattggac agcacagaaa aagatttcca tcaccacaga aaggtcggct 2050
ggcagcactg gccaaggtga tgggggtgtgc tacacagtgt atgtcactgt 2100
gtagtggatg gagtttactg tttgtggaat aaaaacggct gtttccgtgg 2150
aaaaaaaaaa aa 2162

<210> 340
<211> 574
<212> PRT
<213> Homo sapiens

<400> 340
Met Pro Leu Ala Leu Leu Val Leu Leu Leu Leu Gly Pro Gly Gly
1 5 10 15
Trp Cys Leu Ala Glu Pro Pro Arg Asp Ser Leu Arg Glu Glu Leu
20 25 30
Val Ile Thr Pro Leu Pro Ser Gly Asp Val Ala Ala Thr Phe Gln
35 40 45
Phe Arg Thr Arg Trp Asp Ser Glu Leu Gln Arg Glu Gly Val Ser
50 55 60
His Tyr Arg Leu Phe Pro Lys Ala Leu Gly Gln Leu Ile Ser Lys
65 70 75
Tyr Ser Leu Arg Glu Leu His Leu Ser Phe Thr Gln Gly Phe Trp
80 85 90
Arg Thr Arg Tyr Trp Gly Pro Pro Phe Leu Gln Ala Pro Ser Gly
95 100 105
Ala Glu Leu Trp Val Trp Phe Gln Asp Thr Val Thr Asp Val Asp
110 115 120
Lys Ser Trp Lys Glu Leu Ser Asn Val Leu Ser Gly Ile Phe Cys
125 130 135
Ala Ser Leu Asn Phe Ile Asp Ser Thr Asn Thr Val Thr Pro Thr
140 145 150

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Val | Leu | Ser | Ala | Leu | Val | Pro | Ser | Met | Val | Ala | Ala | Lys | Pro | Val | |
| | | | | 470 | | | | | 475 | | | | | 480 | |
| Asp | Trp | Glu | Glu | Ser | Pro | Leu | Phe | Asn | Ser | Leu | Phe | Pro | Val | Ser | |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Asp | Gly | Ser | Asn | Tyr | Phe | Val | Arg | Leu | Tyr | Thr | Glu | Pro | Leu | Leu | |
| | | | | 500 | | | | | 505 | | | | | 510 | |
| Val | Asn | Leu | Pro | Thr | Pro | Asp | Phe | Ser | Met | Pro | Tyr | Asn | Val | Ile | |
| | | | | 515 | | | | | 520 | | | | | 525 | |
| Cys | Leu | Thr | Cys | Thr | Val | Val | Ala | Val | Cys | Tyr | Gly | Ser | Phe | Tyr | |
| | | | | 530 | | | | | 535 | | | | | 540 | |
| Asn | Leu | Leu | Thr | Arg | Thr | Phe | His | Ile | Glu | Glu | Pro | Arg | Thr | Gly | |
| | | | | 545 | | | | | 550 | | | | | 555 | |
| Gly | Leu | Ala | Lys | Arg | Leu | Ala | Asn | Leu | Ile | Arg | Arg | Ala | Arg | Gly | |
| | | | | 560 | | | | | 565 | | | | | 570 | |

Val Pro Pro Leu

<210> 341
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 341
 tggacaccgt accctggtat ctgc 24

<210> 342
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic oligonucleotide probe

<400> 342
 ccaactctga ggagagcaag tggc 24

<210> 343
 <211> 44
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 343
 tgtatgtgca caccctcacc atcacctcca agggcaagga gaac 44

<210> 344
 <211> 762
 <212> DNA
 <213> Homo sapiens

<210> 346
<211> 2528
<212> DNA
<213> Homo sapiens

<400> 346
aaactcagca cttgccggag tggctcattg ttaagacaaa ggggtgtgcac 50
ttcctggcca ggaaacctga gcggtgagac tcccagctgc ctacatcaag 100
gccccaggac atgcagaacc ttctctaga acccgacca ccaccatgag 150
gtcctgcctg tggagatgca ggcacctgag ccaaggcgtc cagtggctct 200
tgcttctggc tgtcctggtc ttctttctct tcgccttgcc ctcttttatt 250
aaggagcctc aaacaaagcc ttccaggcat caacgcacag agaacattaa 300
agaaaggctc ctacagtccc tggcaaagcc taagtcccag gcacccacaa 350
gggcgaggag gacaaccatc tatgcagagc cagcgccaga gaacaatgcc 400
ctcaacacac aaaccagcc caaggccac accaccggag acagaggaaa 450
ggaggccaac caggcacccg cgaggagca ggacaagggtg cccacacacag 500
cacagagggc agcatggaag agcccagaaa aagagaaaac catggtgaac 550
aactgtcac ccagagggca agatgcaggg atggcctctg gcaggacaga 600
ggcacaatca tggaagagcc aggacacaaa gacgaccaa ggaaatgggg 650
gccagaccag gaagctgacg gcctccagga cgggtgtcaga gaagcaccag 700
ggcaaagcgg caaccacagc caagacgctc attcccaaaa gtcagcacag 750
aatgctggct cccacaggag cagtgtcaac aaggacgaga cagaaaggag 800
tgaccacagc agtcatocca cctaaggaga agaaacctca ggccacccca 850
ccccctgcc ctttccagag cccacgacg cagagaaacc aaagactgaa 900
ggccgccaac ttcaaactg agcctcgggtg ggattttgag gaaaaataca 950
gcttcgaaat aggaggcctt cagacgactt gccctgactc tgtgaagatc 1000
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aacactttgc accaccctt ggcttcatgg agctcaacta ctcttggtg 1150
cagaaggctg tgacacgctt ccctccagt cccagcagc agctgctcct 1200
ggccagcctc ccgctggga gcctccggtg catcacctgt gccgtgggtg 1250
gcaacggggg catcctgaac aactcccaca tgggcccagga gatagacagt 1300
cacgactacg tgttccgatt gagcggagct ctcatataag gctacgaaca 1350
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cccagtcact ctttatattg ggcaatcggg gtttcaagaa cgtgcctctt 1450

gggaaggacg tccgctactt gcacttcctg gaaggcaccc gggactatga 1500
 gtggctggaa gcactgctta tgaatcagac ggtgatgtca aaaaaccttt 1550
 tctgggttcag gcacagaccc caggaagctt ttcgggaagc cctgcacatg 1600
 gacaggtacc tggtgctgca cccagacttt ctccgataca tgaagaacag 1650
 gtttctgagg tctaagaccc tggatggtgc ccactggagg atataccgcc 1700
 ccaccactgg ggccctcctg ctgctcactg cccttcagct ctgtgaccag 1750
 gtgagtgtct atggcttcat cactgagggc catgagcgct tttctgatca 1800
 ctactatgat acatcatgga agcggctgat cttttacata aaccatgact 1850
 tcaagctgga gagagaagtc tggaagcggc tacacgatga agggataatc 1900
 cggctgtacc agcgtcctgg tcccgggaact gccaaagcca agaactgacc 1950
 ggggccaggc ctgccatggt ctcccttgct gctccaaggc acaggataca 2000
 gtgggaatct tgagactctt tggccatttc ccatggctca gactaagctc 2050
 caagcccttc aggagttcca agggaaacact tgaacctagg acaagactct 2100
 ctcaagatgg caaatggcta attgaggttc tgaagttctt cagtacattg 2150
 ctgtaggtcc tgaggccagg gatttttaac taaatggggg gatgggtggc 2200
 caataccaca attcctgctg aaaaacactc ttccagtcca aaagcttctt 2250
 gatacagaaa aaagagcctg gatttacaga aacatataga tctgggtttga 2300
 attccagatc gagtttacag ttgtgaaatc ttgaaggtat tacttaactt 2350
 cactacagat tgtctagaag acctttctag gagttatctg attctagaag 2400
 ggtctatact tgccttgtc tttaagctat ttgacaactc tacgtgttgt 2450
 agaaaactga taataatata aatgattgtt gtccatggaa aggcaaataa 2500
 attttctaca gtgaaaaaaaa aaaaaaaaa 2528

<210> 347

<211> 600

<212> PRT

<213> Homo sapiens

<400> 347

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Ser | Cys | Leu | Trp | Arg | Cys | Arg | His | Leu | Ser | Gln | Gly | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gln | Trp | Ser | Leu | Leu | Leu | Ala | Val | Leu | Val | Phe | Phe | Leu | Phe | Ala |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Leu | Pro | Ser | Phe | Ile | Lys | Glu | Pro | Gln | Thr | Lys | Pro | Ser | Arg | His |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Gln | Arg | Thr | Glu | Asn | Ile | Lys | Glu | Arg | Ser | Leu | Gln | Ser | Leu | Ala |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Lys | Pro | Lys | Ser | Gln | Ala | Pro | Thr | Arg | Ala | Arg | Arg | Thr | Thr | Ile |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | | 65 | | | | | | 70 | | | | | 75 |
| Tyr | Ala | Glu | Pro | Ala | Pro | Glu | Asn | Asn | Ala | Leu | Asn | Thr | Gln | Thr | |
| | | | | 80 | | | | | 85 | | | | | | 90 |
| Gln | Pro | Lys | Ala | His | Thr | Thr | Gly | Asp | Arg | Gly | Lys | Glu | Ala | Asn | |
| | | | | 95 | | | | | 100 | | | | | | 105 |
| Gln | Ala | Pro | Pro | Glu | Glu | Gln | Asp | Lys | Val | Pro | His | Thr | Ala | Gln | |
| | | | | 110 | | | | | 115 | | | | | | 120 |
| Arg | Ala | Ala | Trp | Lys | Ser | Pro | Glu | Lys | Glu | Lys | Thr | Met | Val | Asn | |
| | | | | 125 | | | | | 130 | | | | | | 135 |
| Thr | Leu | Ser | Pro | Arg | Gly | Gln | Asp | Ala | Gly | Met | Ala | Ser | Gly | Arg | |
| | | | | 140 | | | | | 145 | | | | | | 150 |
| Thr | Glu | Ala | Gln | Ser | Trp | Lys | Ser | Gln | Asp | Thr | Lys | Thr | Thr | Gln | |
| | | | | 155 | | | | | 160 | | | | | | 165 |
| Gly | Asn | Gly | Gly | Gln | Thr | Arg | Lys | Leu | Thr | Ala | Ser | Arg | Thr | Val | |
| | | | | 170 | | | | | 175 | | | | | | 180 |
| Ser | Glu | Lys | His | Gln | Gly | Lys | Ala | Ala | Thr | Thr | Ala | Lys | Thr | Leu | |
| | | | | 185 | | | | | 190 | | | | | | 195 |
| Ile | Pro | Lys | Ser | Gln | His | Arg | Met | Leu | Ala | Pro | Thr | Gly | Ala | Val | |
| | | | | 200 | | | | | 205 | | | | | | 210 |
| Ser | Thr | Arg | Thr | Arg | Gln | Lys | Gly | Val | Thr | Thr | Ala | Val | Ile | Pro | |
| | | | | 215 | | | | | 220 | | | | | | 225 |
| Pro | Lys | Glu | Lys | Lys | Pro | Gln | Ala | Thr | Pro | Pro | Pro | Ala | Pro | Phe | |
| | | | | 230 | | | | | 235 | | | | | | 240 |
| Gln | Ser | Pro | Thr | Thr | Gln | Arg | Asn | Gln | Arg | Leu | Lys | Ala | Ala | Asn | |
| | | | | 245 | | | | | 250 | | | | | | 255 |
| Phe | Lys | Ser | Glu | Pro | Arg | Trp | Asp | Phe | Glu | Glu | Lys | Tyr | Ser | Phe | |
| | | | | 260 | | | | | 265 | | | | | | 270 |
| Glu | Ile | Gly | Gly | Leu | Gln | Thr | Thr | Cys | Pro | Asp | Ser | Val | Lys | Ile | |
| | | | | 275 | | | | | 280 | | | | | | 285 |
| Lys | Ala | Ser | Lys | Ser | Leu | Trp | Leu | Gln | Lys | Leu | Phe | Leu | Pro | Asn | |
| | | | | 290 | | | | | 295 | | | | | | 300 |
| Leu | Thr | Leu | Phe | Leu | Asp | Ser | Arg | His | Phe | Asn | Gln | Ser | Glu | Trp | |
| | | | | 305 | | | | | 310 | | | | | | 315 |
| Asp | Arg | Leu | Glu | His | Phe | Ala | Pro | Pro | Phe | Gly | Phe | Met | Glu | Leu | |
| | | | | 320 | | | | | 325 | | | | | | 330 |
| Asn | Tyr | Ser | Leu | Val | Gln | Lys | Val | Val | Thr | Arg | Phe | Pro | Pro | Val | |
| | | | | 335 | | | | | 340 | | | | | | 345 |
| Pro | Gln | Gln | Gln | Leu | Leu | Leu | Ala | Ser | Leu | Pro | Ala | Gly | Ser | Leu | |
| | | | | 350 | | | | | 355 | | | | | | 360 |
| Arg | Cys | Ile | Thr | Cys | Ala | Val | Val | Gly | Asn | Gly | Gly | Ile | Leu | Asn | |
| | | | | 365 | | | | | 370 | | | | | | 375 |
| Asn | Ser | His | Met | Gly | Gln | Glu | Ile | Asp | Ser | His | Asp | Tyr | Val | Phe | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| | | | | 380 | | | | | 385 | | | | | 390 |
| Arg | Leu | Ser | Gly | Ala 395 | Leu | Ile | Lys | Gly | Tyr 400 | Glu | Gln | Asp | Val | Gly 405 |
| Thr | Arg | Thr | Ser | Phe 410 | Tyr | Gly | Phe | Thr | Ala 415 | Phe | Ser | Leu | Thr | Gln 420 |
| Ser | Leu | Leu | Ile | Leu 425 | Gly | Asn | Arg | Gly | Phe 430 | Lys | Asn | Val | Pro | Leu 435 |
| Gly | Lys | Asp | Val | Arg 440 | Tyr | Leu | His | Phe | Leu 445 | Glu | Gly | Thr | Arg | Asp 450 |
| Tyr | Glu | Trp | Leu | Glu 455 | Ala | Leu | Leu | Met | Asn 460 | Gln | Thr | Val | Met | Ser 465 |
| Lys | Asn | Leu | Phe | Trp 470 | Phe | Arg | His | Arg | Pro 475 | Gln | Glu | Ala | Phe | Arg 480 |
| Glu | Ala | Leu | His | Met 485 | Asp | Arg | Tyr | Leu | Leu 490 | Leu | His | Pro | Asp | Phe 495 |
| Leu | Arg | Tyr | Met | Lys 500 | Asn | Arg | Phe | Leu | Arg 505 | Ser | Lys | Thr | Leu | Asp 510 |
| Gly | Ala | His | Trp | Arg 515 | Ile | Tyr | Arg | Pro | Thr 520 | Thr | Gly | Ala | Leu | Leu 525 |
| Leu | Leu | Thr | Ala | Leu 530 | Gln | Leu | Cys | Asp | Gln 535 | Val | Ser | Ala | Tyr | Gly 540 |
| Phe | Ile | Thr | Glu | Gly 545 | His | Glu | Arg | Phe | Ser 550 | Asp | His | Tyr | Tyr | Asp 555 |
| Thr | Ser | Trp | Lys | Arg 560 | Leu | Ile | Phe | Tyr | Ile 565 | Asn | His | Asp | Phe | Lys 570 |
| Leu | Glu | Arg | Glu | Val 575 | Trp | Lys | Arg | Leu | His 580 | Asp | Glu | Gly | Ile | Ile 585 |
| Arg | Leu | Tyr | Gln | Arg 590 | Pro | Gly | Pro | Gly | Thr 595 | Ala | Lys | Ala | Lys | Asn 600 |

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 35 40 45
 Tyr Phe Ser Pro Lys Cys Ser Lys His Phe His Arg Leu Tyr His
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Lys

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 35 40 45
 Asn Cys Glu Phe Phe Thr Phe Cys Cys Gly Thr Cys Tyr His Arg
 50 55 60
 Tyr Cys Cys Arg Asp Leu Thr Leu Leu Ile Thr Glu Arg Gln Gln
 65 70 75
 Lys His Cys Leu Ala Phe Ser Pro Lys Thr Ile Ala Gly Ile Ala
 80 85 90
 Ser Ala Val Ile Leu Phe Val Ala Val Val Ala Thr Thr Ile Cys
 95 100 105
 Cys Phe Leu Cys Ser Cys Cys Tyr Leu Tyr Arg Arg Arg Gln Gln
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 Leu Gln Ser Pro Phe Glu Gly Gln Glu Ile Pro Met Thr Gly Ile
 125 130 135
 Pro Val Gln Pro Val Tyr Pro Tyr Pro Gln Asp Pro Lys Ala Gly
 140 145 150
 Pro Ala Pro Pro Gln Pro Gly Phe Met Tyr Pro Pro Ser Gly Pro
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 35 40 45
 Pro Phe Pro Trp Asn Lys Ile Arg Leu Pro Glu Tyr Val Ile Pro
 50 55 60
 Val His Tyr Asp Leu Leu Ile His Ala Asn Leu Thr Thr Leu Thr
 65 70 75
 Phe Trp Gly Thr Thr Lys Val Glu Ile Thr Ala Ser Gln Pro Thr
 80 85 90
 Ser Thr Ile Ile Leu His Ser His His Leu Gln Ile Ser Arg Ala
 95 100 105
 Thr Leu Arg Lys Gly Ala Gly Glu Arg Leu Ser Glu Glu Pro Leu
 110 115 120
 Gln Val Leu Glu His Pro Pro Gln Glu Gln Ile Ala Leu Leu Ala
 125 130 135
 Pro Glu Pro Leu Leu Val Gly Leu Pro Tyr Thr Val Val Ile His
 140 145 150
 Tyr Ala Gly Asn Leu Ser Glu Thr Phe His Gly Phe Tyr Lys Ser
 155 160 165
 Thr Tyr Arg Thr Lys Glu Gly Glu Leu Arg Ile Leu Ala Ser Thr
 170 175 180
 Gln Phe Glu Pro Thr Ala Ala Arg Met Ala Phe Pro Cys Phe Asp
 185 190 195
 Glu Pro Ala Phe Lys Ala Ser Phe Ser Ile Lys Ile Arg Arg Glu
 200 205 210
 Pro Arg His Leu Ala Ile Ser Asn Met Pro Leu Val Lys Ser Val

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|---------|-----|-----|-----|-----|---------|-----|-----|-----|-----|---------|
| | | | | 215 | | | | | 220 | | | | | 225 |
| Thr | Val | Ala | Glu | Gly 230 | Leu | Ile | Glu | Asp | His 235 | Phe | Asp | Val | Thr | Val 240 |
| Lys | Met | Ser | Thr | Tyr 245 | Leu | Val | Ala | Phe | Ile 250 | Ile | Ser | Asp | Phe | Glu 255 |
| Ser | Val | Ser | Lys | Ile 260 | Thr | Lys | Ser | Gly | Val 265 | Lys | Val | Ser | Val | Tyr 270 |
| Ala | Val | Pro | Asp | Lys 275 | Ile | Asn | Gln | Ala | Asp 280 | Tyr | Ala | Leu | Asp | Ala 285 |
| Ala | Val | Thr | Leu | Leu 290 | Glu | Phe | Tyr | Glu | Asp 295 | Tyr | Phe | Ser | Ile | Pro 300 |
| Tyr | Pro | Leu | Pro | Lys 305 | Gln | Asp | Leu | Ala | Ala 310 | Ile | Pro | Asp | Phe | Gln 315 |
| Ser | Gly | Ala | Met | Glu 320 | Asn | Trp | Gly | Leu | Thr 325 | Thr | Tyr | Arg | Glu | Ser 330 |
| Ala | Leu | Leu | Phe | Asp 335 | Ala | Glu | Lys | Ser | Ser 340 | Ala | Ser | Ser | Lys | Leu 345 |
| Gly | Ile | Thr | Val | Thr 350 | Val | Ala | His | Glu | Leu 355 | Ala | His | Gln | Trp | Phe 360 |
| Gly | Asn | Leu | Val | Thr 365 | Met | Glu | Trp | Trp | Asn 370 | Asp | Leu | Trp | Leu | Asn 375 |
| Glu | Gly | Phe | Ala | Lys 380 | Phe | Met | Glu | Phe | Val 385 | Ser | Val | Ser | Val | Thr 390 |
| His | Pro | Glu | Leu | Lys 395 | Val | Gly | Asp | Tyr | Phe 400 | Phe | Gly | Lys | Cys | Phe 405 |
| Asp | Ala | Met | Glu | Val 410 | Asp | Ala | Leu | Asn | Ser 415 | Ser | His | Pro | Val | Ser 420 |
| Thr | Pro | Val | Glu | Asn 425 | Pro | Ala | Gln | Ile | Arg 430 | Glu | Met | Phe | Asp | Asp 435 |
| Val | Ser | Tyr | Asp | Lys 440 | Gly | Ala | Cys | Ile | Leu 445 | Asn | Met | Leu | Arg | Glu 450 |
| Tyr | Leu | Ser | Ala | Asp 455 | Ala | Phe | Lys | Ser | Gly 460 | Ile | Val | Gln | Tyr | Leu 465 |
| Gln | Lys | His | Ser | Tyr 470 | Lys | Asn | Thr | Lys | Asn 475 | Glu | Asp | Leu | Trp | Asp 480 |
| Ser | Met | Ala | Ser | Ile 485 | Cys | Pro | Thr | Asp | Gly 490 | Val | Lys | Gly | Met | Asp 495 |
| Gly | Phe | Cys | Ser | Arg 500 | Ser | Gln | His | Ser | Ser 505 | Ser | Ser | Ser | His | Trp 510 |
| His | Gln | Glu | Gly | Val 515 | Asp | Val | Lys | Thr | Met 520 | Met | Asn | Thr | Trp | Thr 525 |
| Leu | Gln | Arg | Gly | Phe | Pro | Leu | Ile | Thr | Ile | Thr | Val | Arg | Gly | Arg |

| 530 | | | | | | | | | | 535 | | | | | 540 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Asn | Val | His | Met | Lys | Gln | Glu | His | Tyr | Met | Lys | Gly | Ser | Asp | Gly | | | | | |
| | | | | 545 | | | | | 550 | | | | | 555 | | | | | |
| Ala | Pro | Asp | Thr | Gly | Tyr | Leu | Trp | His | Val | Pro | Leu | Thr | Phe | Ile | | | | | |
| | | | | 560 | | | | | 565 | | | | | 570 | | | | | |
| Thr | Ser | Lys | Ser | Asn | Met | Val | His | Arg | Phe | Leu | Leu | Lys | Thr | Lys | | | | | |
| | | | | 575 | | | | | 580 | | | | | 585 | | | | | |
| Thr | Asp | Val | Leu | Ile | Leu | Pro | Glu | Glu | Val | Glu | Trp | Ile | Lys | Phe | | | | | |
| | | | | 590 | | | | | 595 | | | | | 600 | | | | | |
| Asn | Val | Gly | Met | Asn | Gly | Tyr | Tyr | Ile | Val | His | Tyr | Glu | Asp | Asp | | | | | |
| | | | | 605 | | | | | 610 | | | | | 615 | | | | | |
| Gly | Trp | Asp | Ser | Leu | Thr | Gly | Leu | Leu | Lys | Gly | Thr | His | Thr | Ala | | | | | |
| | | | | 620 | | | | | 625 | | | | | 630 | | | | | |
| Val | Ser | Ser | Asn | Asp | Arg | Ala | Ser | Leu | Ile | Asn | Asn | Ala | Phe | Gln | | | | | |
| | | | | 635 | | | | | 640 | | | | | 645 | | | | | |
| Leu | Val | Ser | Ile | Gly | Lys | Leu | Ser | Ile | Glu | Lys | Ala | Leu | Asp | Leu | | | | | |
| | | | | 650 | | | | | 655 | | | | | 660 | | | | | |
| Ser | Leu | Tyr | Leu | Lys | His | Glu | Thr | Glu | Ile | Met | Pro | Val | Phe | Gln | | | | | |
| | | | | 665 | | | | | 670 | | | | | 675 | | | | | |
| Gly | Leu | Asn | Glu | Leu | Ile | Pro | Met | Tyr | Lys | Leu | Met | Glu | Lys | Arg | | | | | |
| | | | | 680 | | | | | 685 | | | | | 690 | | | | | |
| Asp | Met | Asn | Glu | Val | Glu | Thr | Gln | Phe | Lys | Ala | Phe | Leu | Ile | Arg | | | | | |
| | | | | 695 | | | | | 700 | | | | | 705 | | | | | |
| Leu | Leu | Arg | Asp | Leu | Ile | Asp | Lys | Gln | Thr | Trp | Thr | Asp | Glu | Gly | | | | | |
| | | | | 710 | | | | | 715 | | | | | 720 | | | | | |
| Ser | Val | Ser | Glu | Gln | Met | Leu | Arg | Ser | Glu | Leu | Leu | Leu | Leu | Ala | | | | | |
| | | | | 725 | | | | | 730 | | | | | 735 | | | | | |
| Cys | Val | His | Asn | Tyr | Gln | Pro | Cys | Val | Gln | Arg | Ala | Glu | Gly | Tyr | | | | | |
| | | | | 740 | | | | | 745 | | | | | 750 | | | | | |
| Phe | Arg | Lys | Trp | Lys | Glu | Ser | Asn | Gly | Asn | Leu | Ser | Leu | Pro | Val | | | | | |
| | | | | 755 | | | | | 760 | | | | | 765 | | | | | |
| Asp | Val | Thr | Leu | Ala | Val | Phe | Ala | Val | Gly | Ala | Gln | Ser | Thr | Glu | | | | | |
| | | | | 770 | | | | | 775 | | | | | 780 | | | | | |
| Gly | Trp | Asp | Phe | Leu | Tyr | Ser | Lys | Tyr | Gln | Phe | Ser | Leu | Ser | Ser | | | | | |
| | | | | 785 | | | | | 790 | | | | | 795 | | | | | |
| Thr | Glu | Lys | Ser | Gln | Ile | Glu | Phe | Ala | Leu | Cys | Arg | Thr | Gln | Asn | | | | | |
| | | | | 800 | | | | | 805 | | | | | 810 | | | | | |
| Lys | Glu | Lys | Leu | Gln | Trp | Leu | Leu | Asp | Glu | Ser | Phe | Lys | Gly | Asp | | | | | |
| | | | | 815 | | | | | 820 | | | | | 825 | | | | | |
| Lys | Ile | Lys | Thr | Gln | Glu | Phe | Pro | Gln | Ile | Leu | Thr | Leu | Ile | Gly | | | | | |
| | | | | 830 | | | | | 835 | | | | | 840 | | | | | |
| Arg | Asn | Pro | Val | Gly | Tyr | Pro | Leu | Ala | Trp | Gln | Phe | Leu | Arg | Lys | | | | | |

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 845 | | 850 | | 855 |
| Asn Trp Asn Lys | Leu Val Gln Lys Phe | Glu Leu Gly Ser Ser | Ser | | |
| | 860 | | 865 | | 870 |
| Ile Ala His Met | Val Met Gly Thr Thr | Asn Gln Phe Ser Thr | Arg | | |
| | 875 | | 880 | | 885 |
| Thr Arg Leu Glu | Glu Val Lys Gly Phe | Phe Ser Ser Leu Lys | Glu | | |
| | 890 | | 895 | | 900 |
| Asn Gly Ser Gln | Leu Arg Cys Val Gln | Gln Thr Ile Glu Thr | Ile | | |
| | 905 | | 910 | | 915 |
| Glu Glu Asn Ile | Gly Trp Met Asp Lys | Asn Phe Asp Lys Ile | Arg | | |
| | 920 | | 925 | | 930 |
| Val Trp Leu Gln | Ser Glu Lys Leu Glu | Arg Met | | | |
| | 935 | | 940 | | |

<210> 354
 <211> 1587
 <212> DNA
 <213> Homo sapiens

<400> 354
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 gaacaccagc tgcgacagcg gcttgggggtg ccaggacacg ttgatgctca 200
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 <211> 437
 <212> PRT
 <213> Homo sapiens

<400> 355
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 His Val Trp Lys Val Ser Asp Leu Pro Arg Gln Trp Thr Pro Lys
 35 40 45
 Asn Thr Ser Cys Asp Ser Gly Leu Gly Cys Gln Asp Thr Leu Met
 50 55 60
 Leu Ile Glu Ser Gly Pro Gln Val Ser Leu Val Leu Ser Lys Gly
 65 70 75
 Cys Thr Glu Ala Lys Asp Gln Glu Pro Arg Val Thr Glu His Arg
 80 85 90
 Met Gly Pro Gly Leu Ser Leu Ile Ser Tyr Thr Phe Val Cys Arg
 95 100 105
 Gln Glu Asp Phe Cys Asn Asn Leu Val Asn Ser Leu Pro Leu Trp
 110 115 120
 Ala Pro Gln Pro Pro Ala Asp Pro Gly Ser Leu Arg Cys Pro Val
 125 130 135
 Cys Leu Ser Met Glu Gly Cys Leu Glu Gly Thr Thr Glu Glu Ile
 140 145 150
 Cys Pro Lys Gly Thr Thr His Cys Tyr Asp Gly Leu Leu Arg Leu

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| | | | | 155 | | | | | 160 | | | | | 165 |
| Arg | Gly | Gly | Gly | Ile 170 | Phe | Ser | Asn | Leu | Arg 175 | Val | Gln | Gly | Cys | Met 180 |
| Pro | Gln | Pro | Gly | Cys 185 | Asn | Leu | Leu | Asn | Gly 190 | Thr | Gln | Glu | Ile | Gly 195 |
| Pro | Val | Gly | Met | Thr 200 | Glu | Asn | Cys | Asn | Arg 205 | Lys | Asp | Phe | Leu | Thr 210 |
| Cys | His | Arg | Gly | Thr 215 | Thr | Ile | Met | Thr | His 220 | Gly | Asn | Leu | Ala | Gln 225 |
| Glu | Pro | Thr | Asp | Trp 230 | Thr | Thr | Ser | Asn | Thr 235 | Glu | Met | Cys | Glu | Val 240 |
| Gly | Gln | Val | Cys | Gln 245 | Glu | Thr | Leu | Leu | Leu 250 | Ile | Asp | Val | Gly | Leu 255 |
| Thr | Ser | Thr | Leu | Val 260 | Gly | Thr | Lys | Gly | Cys 265 | Ser | Thr | Val | Gly | Ala 270 |
| Gln | Asn | Ser | Gln | Lys 275 | Thr | Thr | Ile | His | Ser 280 | Ala | Pro | Pro | Gly | Val 285 |
| Leu | Val | Ala | Ser | Tyr 290 | Thr | His | Phe | Cys | Ser 295 | Ser | Asp | Leu | Cys | Asn 300 |
| Ser | Ala | Ser | Ser | Ser 305 | Ser | Val | Leu | Leu | Asn 310 | Ser | Leu | Pro | Pro | Gln 315 |
| Ala | Ala | Pro | Val | Pro 320 | Gly | Asp | Arg | Gln | Cys 325 | Pro | Thr | Cys | Val | Gln 330 |
| Pro | Leu | Gly | Thr | Cys 335 | Ser | Ser | Gly | Ser | Pro 340 | Arg | Met | Thr | Cys | Pro 345 |
| Arg | Gly | Ala | Thr | His 350 | Cys | Tyr | Asp | Gly | Tyr 355 | Ile | His | Leu | Ser | Gly 360 |
| Gly | Gly | Leu | Ser | Thr 365 | Lys | Met | Ser | Ile | Gln 370 | Gly | Cys | Val | Ala | Gln 375 |
| Pro | Ser | Ser | Phe | Leu 380 | Leu | Asn | His | Thr | Arg 385 | Gln | Ile | Gly | Ile | Phe 390 |
| Ser | Ala | Arg | Glu | Lys 395 | Arg | Asp | Val | Gln | Pro 400 | Pro | Ala | Ser | Gln | His 405 |
| Glu | Gly | Gly | Gly | Ala 410 | Glu | Gly | Leu | Glu | Ser 415 | Leu | Thr | Trp | Gly | Val 420 |
| Gly | Leu | Ala | Leu | Ala 425 | Pro | Ala | Leu | Trp | Trp 430 | Gly | Val | Val | Cys | Pro 435 |

Ser Cys

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<210> 356
<211> 1238
<212> DNA
<213> Homo sapiens
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| Asp | Ala | Cys | Ser | Val | Gln | Ile | Leu | Val | Pro | Gly | Leu | Lys | Gly | Asp | 45 |
| | | | | 35 | | | | | 40 | | | | | | |
| Ala | Gly | Glu | Lys | Gly | Asp | Lys | Gly | Ala | Pro | Gly | Arg | Pro | Gly | Arg | 60 |
| | | | | 50 | | | | | 55 | | | | | | |
| Val | Gly | Pro | Thr | Gly | Glu | Lys | Gly | Asp | Met | Gly | Asp | Lys | Gly | Gln | 75 |
| | | | | 65 | | | | | 70 | | | | | | |
| Lys | Gly | Ser | Val | Gly | Arg | His | Gly | Lys | Ile | Gly | Pro | Ile | Gly | Ser | 90 |
| | | | | 80 | | | | | 85 | | | | | | |
| Lys | Gly | Glu | Lys | Gly | Asp | Ser | Gly | Asp | Ile | Gly | Pro | Pro | Gly | Pro | 105 |
| | | | | 95 | | | | | 100 | | | | | | |
| Asn | Gly | Glu | Pro | Gly | Leu | Pro | Cys | Glu | Cys | Ser | Gln | Leu | Arg | Lys | 120 |
| | | | | 110 | | | | | 115 | | | | | | |
| Ala | Ile | Gly | Glu | Met | Asp | Asn | Gln | Val | Ser | Gln | Leu | Thr | Ser | Glu | 135 |
| | | | | 125 | | | | | 130 | | | | | | |
| Leu | Lys | Phe | Ile | Lys | Asn | Ala | Val | Ala | Gly | Val | Arg | Glu | Thr | Glu | 150 |
| | | | | 140 | | | | | 145 | | | | | | |
| Ser | Lys | Ile | Tyr | Leu | Leu | Val | Lys | Glu | Glu | Lys | Arg | Tyr | Ala | Asp | 165 |
| | | | | 155 | | | | | 160 | | | | | | |
| Ala | Gln | Leu | Ser | Cys | Gln | Gly | Arg | Gly | Gly | Thr | Leu | Ser | Met | Pro | 180 |
| | | | | 170 | | | | | 175 | | | | | | |
| Lys | Asp | Glu | Ala | Ala | Asn | Gly | Leu | Met | Ala | Ala | Tyr | Leu | Ala | Gln | 195 |
| | | | | 185 | | | | | 190 | | | | | | |
| Ala | Gly | Leu | Ala | Arg | Val | Phe | Ile | Gly | Ile | Asn | Asp | Leu | Glu | Lys | 210 |
| | | | | 200 | | | | | 205 | | | | | | |
| Glu | Gly | Ala | Phe | Val | Tyr | Ser | Asp | His | Ser | Pro | Met | Arg | Thr | Phe | 225 |
| | | | | 215 | | | | | 220 | | | | | | |
| Asn | Lys | Trp | Arg | Ser | Gly | Glu | Pro | Asn | Asn | Ala | Tyr | Asp | Glu | Glu | 240 |
| | | | | 230 | | | | | 235 | | | | | | |
| Asp | Cys | Val | Glu | Met | Val | Ala | Ser | Gly | Gly | Trp | Asn | Asp | Val | Ala | 255 |
| | | | | 245 | | | | | 250 | | | | | | |
| Cys | His | Thr | Thr | Met | Tyr | Phe | Met | Cys | Glu | Phe | Asp | Lys | Glu | Asn | 270 |
| | | | | 260 | | | | | 265 | | | | | | |

Met

<210> 358

<211> 972

<212> DNA

<213> Homo sapiens

<400> 358

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gttccttgat cctgccagac caccagccc ccggcacaga gctgctccac 150

Ser Thr Gly Lys Ser Ser Leu Gly Thr Glu Glu Gln Arg Pro Leu
125 130 135

<210> 360
<211> 1738
<212> DNA
<213> Homo sapiens

<400> 360
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aacaagcttc ggggccaggc gcagcctcag gcctccaaca tggagtacat 450
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gccaccagcc tgctctgttc ccagccagc tctgttcccc agccagtgcg 550
tgtgatggct ggctcagggt ctctctggc aggggaggat cccggctctg 600
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<210> 361
 <211> 159
 <212> PRT
 <213> Homo sapiens

<400> 361
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 Leu Val Cys Gly Ser Gln Gly Tyr Leu Leu Pro Asn Val Thr Leu
 20 25 30
 Leu Glu Glu Leu Leu Ser Lys Tyr Gln His Asn Glu Ser His Ser
 35 40 45
 Arg Val Arg Arg Ala Ile Pro Arg Glu Asp Lys Glu Glu Ile Leu
 50 55 60
 Met Leu His Asn Lys Leu Arg Gly Gln Val Gln Pro Gln Ala Ser
 65 70 75
 Asn Met Glu Tyr Met Val Ser Ala Gly Ser Gly Arg Arg Gly Trp
 80 85 90
 His Arg Gly Trp Gly Leu Gly His Gln Pro Ala Leu Phe Pro Ser
 95 100 105
 Gln Leu Cys Ser Pro Ala Ser Ala Cys Asp Gly Trp Leu Arg Val
 110 115 120
 Ser Ser Gly Arg Gly Gly Ser Arg Leu Cys Ser Val Leu Phe Val
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 Cys Phe Glu Thr Gly Ser His Ser Ala Thr Asp Ala Gly Val Gln
 140 145 150
 Trp His Asn Arg His Ala Leu Lys Pro
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<210> 362
 <211> 422
 <212> DNA
 <213> Homo sapiens

<400> 362
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tgaaaagctc tgccctctcc tccatctccc ttcagggacc agcgtcacc 250
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<211> 78
<212> PRT
<213> Homo sapiens

<400> 363
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35 40 45
Glu Leu Leu Glu Lys Leu Cys Leu Leu Leu His Leu Pro Ser Gly
50 55 60
Thr Ser Val Thr Leu His His Ala Arg Ser Gln His His Val Val
65 70 75

Cys Asn Thr

<210> 364
<211> 826
<212> DNA
<213> Homo sapiens

<400> 364
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<210> 365
<211> 67
<212> PRT
<213> Homo sapiens

<400> 365
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Phe Ser Val Glu Asn Glu Cys Leu Val Asp Leu Cys Leu Leu Arg
35 40 45
Ile Cys Tyr Lys Leu Ser Gly Val Pro Asn Gln Cys Arg Val Pro
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<210> 366
<211> 2475
<212> DNA
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 ggagactggg atagcttccc atcacagaac tgtgttccat caaaaagaca 1850
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 gtcatgaaag tggtaaaagt gggaaaccagt gtgctttgaa accaaattag 2050

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 cctctttttca gttcatcaag ttcacagat atttgagtgc ccactctgtg 2200
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 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa a 2281

<210> 369
 <211> 447
 <212> PRT
 <213> Homo sapiens

<400> 369

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Glu | Leu | Ser | Gln | Met | Ser | Glu | Leu | Met | Gly | Leu | Ser | Val | Leu | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Leu | Gly | Leu | Leu | Ala | Leu | Met | Ala | Thr | Ala | Ala | Val | Ala | Arg | Gly | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Trp | Leu | Arg | Ala | Gly | Glu | Glu | Arg | Ser | Gly | Arg | Pro | Ala | Cys | Gln | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Lys | Ala | Asn | Gly | Phe | Pro | Pro | Asp | Lys | Ser | Ser | Gly | Ser | Lys | Lys | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Gln | Lys | Gln | Tyr | Gln | Arg | Ile | Arg | Lys | Glu | Lys | Pro | Gln | Gln | His | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Asn | Phe | Thr | His | Arg | Leu | Leu | Ala | Ala | Ala | Leu | Lys | Ser | His | Ser | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Gly | Asn | Ile | Ser | Cys | Met | Asp | Phe | Ser | Ser | Asn | Gly | Lys | Tyr | Leu | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Ala | Thr | Cys | Ala | Asp | Asp | Arg | Thr | Ile | Arg | Ile | Trp | Ser | Thr | Lys | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Asp | Phe | Leu | Gln | Arg | Glu | His | Arg | Ser | Met | Arg | Ala | Asn | Val | Glu | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Leu | Asp | His | Ala | Thr | Leu | Val | Arg | Phe | Ser | Pro | Asp | Cys | Arg | Ala | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Phe | Ile | Val | Trp | Leu | Ala | Asn | Gly | Asp | Thr | Leu | Arg | Val | Phe | Lys | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Met | Thr | Lys | Arg | Glu | Asp | Gly | Gly | Tyr | Thr | Phe | Thr | Ala | Thr | Pro | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Glu | Asp | Phe | Pro | Lys | Lys | His | Lys | Ala | Pro | Val | Ile | Asp | Ile | Gly | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ile | Ala | Asn | Thr | Gly | Lys | Phe | Ile | Met | Thr | Ala | Ser | Ser | Asp | Thr | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Thr | Val | Leu | Ile | Trp | Ser | Leu | Lys | Gly | Gln | Val | Leu | Ser | Thr | Ile | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Asn | Thr | Asn | Gln | Met | Asn | Asn | Thr | His | Ala | Ala | Val | Ser | Pro | Cys | |
| | | | | 230 | | | | | 235 | | | | | 240 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gly | Arg | Phe | Val | Ala | Ser | Cys | Gly | Phe | Thr | Pro | Asp | Val | Lys | Val | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Trp | Glu | Val | Cys | Phe | Gly | Lys | Lys | Gly | Glu | Phe | Gln | Glu | Val | Val | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Arg | Ala | Phe | Glu | Leu | Lys | Gly | His | Ser | Ala | Ala | Val | His | Ser | Phe | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Ala | Phe | Ser | Asn | Asp | Ser | Arg | Arg | Met | Ala | Ser | Val | Ser | Lys | Asp | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Gly | Thr | Trp | Lys | Leu | Trp | Asp | Thr | Asp | Val | Glu | Tyr | Lys | Lys | Lys | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Gln | Asp | Pro | Tyr | Leu | Leu | Lys | Thr | Gly | Arg | Phe | Glu | Glu | Ala | Ala | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Gly | Ala | Ala | Pro | Cys | Arg | Leu | Ala | Leu | Ser | Pro | Asn | Ala | Gln | Val | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Leu | Ala | Leu | Ala | Ser | Gly | Ser | Ser | Ile | His | Leu | Tyr | Asn | Thr | Arg | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Arg | Gly | Glu | Lys | Glu | Glu | Cys | Phe | Glu | Arg | Val | His | Gly | Glu | Cys | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Ile | Ala | Asn | Leu | Ser | Phe | Asp | Ile | Thr | Gly | Arg | Phe | Leu | Ala | Ser | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Cys | Gly | Asp | Arg | Ala | Val | Arg | Leu | Phe | His | Asn | Thr | Pro | Gly | His | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Arg | Ala | Met | Val | Glu | Glu | Met | Gln | Gly | His | Leu | Lys | Arg | Ala | Ser | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Asn | Glu | Ser | Thr | Arg | Gln | Arg | Leu | Gln | Gln | Gln | Leu | Thr | Gln | Ala | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Gln | Glu | Thr | Leu | Lys | Ser | Leu | Gly | Ala | Leu | Lys | Lys | | | | |
| | | | | 440 | | | | | 445 | | | | | | |

<210> 370
 <211> 1415
 <212> DNA
 <213> Homo sapiens

<400> 370
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 ccacgcgagt ctcaatcatg ctctccttag taactgtgtc tgactgtgct 150
 gtgatcacag gggcctgtga gcgggatgtc cagtgtgggg caggcacctg 200
 ctgtgccatc agcctgtggc ttcgagggct gcggatgtgc accccgctgg 250
 ggcgggaagg cgaggagtgc caccocggca gccacaaggt ccccttcttc 300
 aggaaacgca agcaccacac ctgtccttgc ttgcccaacc tgctgtgctc 350
 caggttcccg gacggcaggt accgctgctc catggacttg aagaacatca 400

atttttaggc gcttgccctgg tctcaggata cccaccatcc ttttcctgag 450
 cacagcctgg atttttattt ctgccatgaa acccagctcc catgactctc 500
 ccagtcacct cactgactac cctgatctct cttgtctagt acgcacatat 550
 gcacacaggg agacatacct cccatcatga catgggtccc aggctggcct 600
 gaggatgtca cagcttgagg ctgtgggtgtg aaagggtggcc agcctgggtc 650
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 ttgggtgcat tgcctcagagt cccaggtcct ggctgaccc tcaggccctt 850
 cacgtgaggt ctgtgaggac caatttgtgg gtagttcatc ttccctcgat 900
 tggttaactc cttagtttca gaccacagac tcaagattgg ctcttcccag 950
 agggcagcag acagtcaccc caaggcaggt gtagggagcc cagggaggcc 1000
 aatcagcccc ctgaagactc tgggtcccagt cagcctgtgg cttgtggcct 1050
 gtgacctgtg accttctgcc agaattgtca tgcctctgag gccccctctt 1100
 accacacttt accagttaac cactgaagcc cccaattccc acagcttttc 1150
 cattaaaatg caaatgggtg tggttcaatc taatctgata ttgacatatt 1200
 agaaggcaat taggggtgtt octtaaacaa ctcccttcca aggatcagcc 1250
 ctgagagcag gttgggtgact ttgaggaggg cagtcctctg tccagattgg 1300
 ggtgggagca agggacaggg agcagggcag gggctgaaag gggcactgat 1350
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 caccaactga aaaaa 1415

<210> 371

<211> 105

<212> PRT

<213> Homo sapiens

<400> 371

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Gly | Ala | Thr | Arg | Val | Ser | Ile | Met | Leu | Leu | Leu | Val | Thr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Val | Ser | Asp | Cys | Ala | Val | Ile | Thr | Gly | Ala | Cys | Glu | Arg | Asp | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Gln | Cys | Gly | Ala | Gly | Thr | Cys | Cys | Ala | Ile | Ser | Leu | Trp | Leu | Arg |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Gly | Leu | Arg | Met | Cys | Thr | Pro | Leu | Gly | Arg | Glu | Gly | Glu | Glu | Cys |
| | | | | 50 | | | | | 55 | | | | | 60 |
| His | Pro | Gly | Ser | His | Lys | Val | Pro | Phe | Phe | Arg | Lys | Arg | Lys | His |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Thr | Cys | Pro | Cys | Leu | Pro | Asn | Leu | Leu | Cys | Ser | Arg | Phe | Pro |
| | | | | 80 | | | | 85 | | | | | | 90 |
| Asp | Gly | Arg | Tyr | Arg | Cys | Ser | Met | Asp | Leu | Lys | Asn | Ile | Asn | Phe |
| | | | | 95 | | | | 100 | | | | | | 105 |

<210> 372
 <211> 1281
 <212> DNA
 <213> Homo sapiens

<400> 372
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 gaaatgtctt tcctccagga cccaagtttc ttcacccatgg ggatgtggtc 100
 cattggtgca ggagccctgg gggctgctgc cttggcattg ctgcttgcca 150
 acacagacgt gtttctgtcc aagccccaga aagcggccct ggagtacctg 200
 gaggatatag acctgaaaac actggagaag gaaccaagga ctttcaaagc 250
 aaaggagcta tgggaaaaaa atggagctgt gattatggcc gtgcggaggc 300
 caggctgttt cctctgtcga gaggaagctg cggatctgtc ctccctgaaa 350
 agcatgttgg accagctggg cgtccccctc tatgcagtgg taaaggagca 400
 catcaggact gaagtgaagg atttccagcc ttatttcaaa ggagaaatct 450
 tcctggatga aaagaaaaag ttctatggtc cacaaaggcg gaagatgatg 500
 tttatgggat ttatcgtctt gggagtgtgg tacaacttct tccgagcctg 550
 gaacggagggc ttctctggaa acctggaagg agaaggcttc atccttgggg 600
 gagttttcgt ggtgggatca ggaaagcagg gcattcttct tgagcaccga 650
 gaaaaagaat ttggagacaa agtaaaccta ctttctgttc tggaagctgc 700
 taagatgata aaaccacaga ctttggcctc agagaaaaaa tgattgtgtg 750
 aaactgcccc gctcagggat aaccaggagc attcacctgt gttcatggga 800
 tgtattgttt ccactcgtgt ccctaaggag tgagaaacc atttatactc 850
 tactctcagt atggattatt aatgtatatt aatattctgt ttaggccac 900
 taaggcaaaa tagcccaaaa acaagactga caaaaatctg aaaaactaat 950
 gaggattatt aagctaaaac ctgggaaata ggaggcttaa aattgactgc 1000
 caggctgggt gcagtggctc acacctgtaa tcccagcact ttgggaggcc 1050
 aaggtgagca agtcacttga ggtcgggagt tcgagaccag cctgagcaac 1100
 atggcgaaac cccgtctcta ctaaaaatac aaaaatcacc cgggtgtggg 1150
 ggcaggcacc tgtagtccca gctacccggg aggctgaggc aggagaatca 1200
 cttgaacctg ggaggtggag gttgcggtga gctgagatca caccactgta 1250
 ttccagcctg ggtgactgag actctaacta a 1281

<210> 373
 <211> 229
 <212> PRT
 <213> Homo sapiens

<400> 373

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Phe | Leu | Gln | Asp | Pro | Ser | Phe | Phe | Thr | Met | Gly | Met | Trp |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ser | Ile | Gly | Ala | Gly | Ala | Leu | Gly | Ala | Ala | Ala | Leu | Ala | Leu | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Ala | Asn | Thr | Asp | Val | Phe | Leu | Ser | Lys | Pro | Gln | Lys | Ala | Ala |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Glu | Tyr | Leu | Glu | Asp | Ile | Asp | Leu | Lys | Thr | Leu | Glu | Lys | Glu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Pro | Arg | Thr | Phe | Lys | Ala | Lys | Glu | Leu | Trp | Glu | Lys | Asn | Gly | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Val | Ile | Met | Ala | Val | Arg | Arg | Pro | Gly | Cys | Phe | Leu | Cys | Arg | Glu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Glu | Ala | Ala | Asp | Leu | Ser | Ser | Leu | Lys | Ser | Met | Leu | Asp | Gln | Leu |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gly | Val | Pro | Leu | Tyr | Ala | Val | Val | Lys | Glu | His | Ile | Arg | Thr | Glu |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Val | Lys | Asp | Phe | Gln | Pro | Tyr | Phe | Lys | Gly | Glu | Ile | Phe | Leu | Asp |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Glu | Lys | Lys | Lys | Phe | Tyr | Gly | Pro | Gln | Arg | Arg | Lys | Met | Met | Phe |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Met | Gly | Phe | Ile | Arg | Leu | Gly | Val | Trp | Tyr | Asn | Phe | Phe | Arg | Ala |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Trp | Asn | Gly | Gly | Phe | Ser | Gly | Asn | Leu | Glu | Gly | Glu | Gly | Phe | Ile |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Leu | Gly | Gly | Val | Phe | Val | Val | Gly | Ser | Gly | Lys | Gln | Gly | Ile | Leu |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Leu | Glu | His | Arg | Glu | Lys | Glu | Phe | Gly | Asp | Lys | Val | Asn | Leu | Leu |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Ser | Val | Leu | Glu | Ala | Ala | Lys | Met | Ile | Lys | Pro | Gln | Thr | Leu | Ala |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ser | Glu | Lys | Lys | | | | | | | | | | | |

<210> 374
 <211> 744
 <212> DNA
 <213> Homo sapiens

<400> 374

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gcggtaggag gggcgagcgc gagaagcccc ttcctcggcg ctgccaaccc 150
gccaccacgc ccatggcgaa ccccgggctg gggctgcttc tggcgctggg 200
cctgccgttc ctgctggccc gctggggccg agcctggggg caaatacaga 250
ccacttctgc aaatgagaat agcactgttt tgccttcac caccagctcc 300
agctccgatg gcaacctgcg tccggaagcc atcactgcta tcatcgtggg 350
cttctccctc ttggctgcct tgctcctggc tgtggggctg gcactgttgg 400
tgcggaagct tcgggagaag cggcagacgg agggcaccta ccggcccagt 450
agcgaggagc agttctccca tgcagccgag gcccgggccc ctgaggactc 500
caaggagacg gtgcagggct gcctgcccac ctaggtcccc tctcctgcat 550
ctgtctccct tcattgctgt gtgaccttgg ggaaaggcag tgccctctct 600
gggcagtcag atccaccacg tgcttaatat cagggaagaa ggtacttcaa 650
agactctgcc cctgaggtca agagaggatg gggctattca cttttatata 700
tttatataaa attagtagtg agatgtaaaa aaaaaaaaaa aaaa 744

<210> 375
<211> 123
<212> PRT
<213> Homo sapiens

<400> 375
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Thr Ser Ala Asn Glu Asn Ser Thr Val Leu Pro Ser Ser Thr Ser
35 40 45
Ser Ser Ser Asp Gly Asn Leu Arg Pro Glu Ala Ile Thr Ala Ile
50 55 60
Ile Val Val Phe Ser Leu Leu Ala Ala Leu Leu Leu Ala Val Gly
65 70 75
Leu Ala Leu Leu Val Arg Lys Leu Arg Glu Lys Arg Gln Thr Glu
80 85 90
Gly Thr Tyr Arg Pro Ser Ser Glu Glu Gln Phe Ser His Ala Ala
95 100 105
Glu Ala Arg Ala Pro Gln Asp Ser Lys Glu Thr Val Gln Gly Cys
110 115 120

Leu Pro Ile

<210> 376
<211> 713
<212> DNA
<213> Homo sapiens

<400> 376
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aacatttggg ttttgggatt ttaattttca aacacagcag aatgacattt 100
tttctgtcac tattattatt gttggtatgt gaagctattt ggagatccaa 150
ttcaggaagc aacacattgg agaatggcta ctttctatca agaaataaag 200
agaaccacag tcaaccaca caatcatcctt tagaagacag tgtgactcct 250
accaaagctg tcaaaaccac aggcaagggc atagttaaag gacggaatct 300
tgactcaaga gggttaattc ttggtgctga agcctggggc aggggtgtaa 350
agaaaaacac ttagattcaa tgattgtaaa tttaaggcaa atacacatat 400
tagtattacc ttagtgtaat gtatccctgt catatataca ataagtgaa 450
attataagta cccatgacag ttggctggac agttctaaat tggactttat 500
taatttttaa aatcagtaac tgatttatca ctggctatgt gcttagatct 550
acaggagatc atataatttg atacaaataa aagaaaagtg ttctctcccc 600
ttacagaatt gacattttta atgcgataca gttagaatag gaaatatgac 650
attagaaagg aagaatgaca gggagaaagg aaagaaggga aaatgttgcc 700
aaggaaaaaa aaa 713

<210> 377
<211> 90
<212> PRT
<213> Homo sapiens

<400> 377
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Ile Trp Arg Ser Asn Ser Gly Ser Asn Thr Leu Glu Asn Gly Tyr
20 25 30
Phe Leu Ser Arg Asn Lys Glu Asn His Ser Gln Pro Thr Gln Ser
35 40 45
Ser Leu Glu Asp Ser Val Thr Pro Thr Lys Ala Val Lys Thr Thr
50 55 60
Gly Lys Gly Ile Val Lys Gly Arg Asn Leu Asp Ser Arg Gly Leu
65 70 75
Ile Leu Gly Ala Glu Ala Trp Gly Arg Gly Val Lys Lys Asn Thr
80 85 90

<210> 378
<211> 3265
<212> DNA
<213> Homo sapiens

<400> 378
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cctcttagtt ctgtgctgc tgcaccagtc aaatacttcc ttcattaagc 100
tgaataataa tggctttgaa gatattgtca ttgttataga tcctagtgtg 150
ccagaagatg aaaaaataat tgaacaaata gaggatatgg tgactacagc 200
ttctacgtac ctgtttgaag ccacagaaaa aagatttttt ttcaaaaatg 250
tatctatatt aattcctgag aattggaagg aaaatcctca gtacaaaagg 300
ccaaaacatg aaaaccataa acatgctgat gttatagttg caccacctac 350
actcccaggt agagatgaac catacaccaa gcagttcaca gaatgtggag 400
agaaaggcga atacattcac ttcacccttg accttctact tggaaaaaaa 450
caaaatgaat atggaccacc agggcaactg tttgtccatg agtgggctca 500
cctccgggtg ggagtgtttg atgagtacaa tgaagatcag cctttctacc 550
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ggtagaaata gagtttataa gtgtcaagga ggcagctgtc ttagtagagc 650
atgcagaatt gattctacaa caaaactgta tggaaaagat tgtcaattct 700
ttcctgataa agtacaaaca gaaaaagcat ccataatgtt tatgcaaagt 750
attgattctg ttgttgaatt ttgtaacgaa aaaaccata atcaagaagc 800
tccaagccta caaaacataa agtgcaattt tagaagtaca tgggaggtga 850
ttagcaattc tgaggatttt aaaaacacca taccatgggt gacaccacct 900
cctccacctg tcttctcatt gctgaagatc agtcaaagaa ttgtgtgctt 950
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tgaatcaagc agcaaaacat ttctgctgc agactgttga aaatggatcc 1050
tgggtgggga tggttcactt tgatagtact gccactattg taaataagct 1100
aatccaaata aaaagcagtg atgaaagaaa cacactcatg gcaggattac 1150
ctacatatcc tctgggagga acttccatct gctctggaat taaatatgca 1200
tttcaggtga ttggagagct acattcccaa ctcgatggat ccgaagtact 1250
gctgctgact gatggggagg ataacactgc aagttcttgt attgatgaag 1300
tgaaacaaag tggggccatt gttcatttta ttgctttggg aagagctgct 1350
gatgaagcag taatagagat gagcaagata acaggaggaa gtcattttta 1400
tgtttcagat gaagctcaga acaatggcct cattgatgct tttggggctc 1450
ttacatcagg aaatactgat ctctcccaga agtcccttca gctcgaaagt 1500
aagggattaa cactgaatag taatgcctgg atgaacgaca ctgtcataat 1550
tgatagtaca gtgggaaagg acaogttctt tctcatcaca tggaacagtc 1600
tgcctcccag tatttctctc tgggatccca gtggaacaat aatggaaaat 1650

ttcacagtgg atgcaacttc caaaatggcc tatctcagta ttccaggaac 1700
 tgcaaagggtg ggcaacttggg catacaatct tcaagccaaa gcgaacccag 1750
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 cccaatgatt gtttacgcag aaattctaca aggatatgta cctgttcttg 1900
 gagccaatgt gactgctttc attgaatcac agaatggaca tacagaagtt 1950
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gagaaaaata tatatatata tatatatatt gtgaaagatc aatccatctg 3450
ccagaatcta gtgggatgga agtttttgct acatgttatc caccacaggc 3500
caggtggaag taactgaatt attttttaaa ttaagcagtt ctactcaatc 3550
accaagatgc ttctgaaaat tgcattttat taccatttca aactattttt 3600
taaaaaataa tacagttaac atagagtggg ttcttcattc atgtgaaaat 3650
tattagccag caccagatgc atgagctaata tatctctttg agtccttgct 3700
tctgtttgct cacagtaaac tcattgttta aaagcttcaa gaacattcaa 3750
gctgttggtg tgttaaaaaa tgcattgtat tgatttgtac tggtagttaa 3800
tgaaatttaa ttaaaacaca ggccatgaat ggaaggtggg attgcacagc 3850
taataaaata tgatttgtgg atatgaa 3877

<210> 381

<211> 532

<212> PRT

<213> Homo sapiens

<400> 381

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Met | Met | Val | Arg | Arg | Gly | Leu | Leu | Ala | Trp | Ile | Ser | Arg | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Val | Val | Leu | Leu | Val | Leu | Leu | Cys | Cys | Ala | Ile | Ser | Val | Leu | Tyr |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Met | Leu | Ala | Cys | Thr | Pro | Lys | Gly | Asp | Glu | Glu | Gln | Leu | Ala | Leu |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Pro | Arg | Ala | Asn | Ser | Pro | Thr | Gly | Lys | Glu | Gly | Tyr | Gln | Ala | Val |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Gln | Glu | Trp | Glu | Glu | Gln | His | Arg | Asn | Tyr | Val | Ser | Ser | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Lys | Arg | Gln | Ile | Ala | Gln | Leu | Lys | Glu | Glu | Leu | Gln | Glu | Arg | Ser |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Glu | Gln | Gln | Leu | Val | Ile | Lys | Lys | Glu | Thr | Gly | Phe | Trp | Arg | Asp | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Phe | Gly | Phe | Gly | Met | Thr | Cys | Gln | Tyr | Arg | Ser | Asp | Phe | Ile | Asn | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Ile | Gly | Gly | Phe | Asp | Leu | Asp | Ile | Lys | Gly | Trp | Gly | Gly | Glu | Asp | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Val | His | Leu | Tyr | Arg | Lys | Tyr | Leu | His | Ser | Asn | Leu | Ile | Val | Val | |
| | | | | 455 | | | | | 460 | | | | | 465 | |
| Arg | Thr | Pro | Val | Arg | Gly | Leu | Phe | His | Leu | Trp | His | Glu | Lys | Arg | |
| | | | | 470 | | | | | 475 | | | | | 480 | |
| Cys | Met | Asp | Glu | Leu | Thr | Pro | Glu | Gln | Tyr | Lys | Met | Cys | Met | Gln | |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Ser | Lys | Ala | Met | Asn | Glu | Ala | Ser | His | Gly | Gln | Leu | Gly | Met | Leu | |
| | | | | 500 | | | | | 505 | | | | | 510 | |
| Val | Phe | Arg | His | Glu | Ile | Glu | Ala | His | Leu | Arg | Lys | Gln | Lys | Gln | |
| | | | | 515 | | | | | 520 | | | | | 525 | |
| Lys | Thr | Ser | Ser | Lys | Lys | Thr | | | | | | | | | |
| | | | | 530 | | | | | | | | | | | |

<210> 382
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 382
 ctcggggaaa gggacttgat gttgg 25

<210> 383
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 383
 gcgaaggatga gcctctatct cgtgcc 26

<210> 384
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 384
 cagcctacac gtattgagg 19

<210> 385
 <211> 48
 <212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 385

cagtcagtagc aatcctggca taatatacgg ccaccatgat gcagtccc 48

<210> 386

<211> 1346

<212> DNA

<213> Homo sapiens

<400> 386

gaaagaatgt tgtggctgct cttttttctg gtgactgccca ttcattgctga 50
actctgtcaa ccagggtgcag aaaatgcttt taaagtgaga cttagtatca 100
gaacagctct gggagataaa gcatatgcct gggataccaa tgaagaatac 150
ctcttcaaag cgatggtagc tttctccatg agaaaagttc ccaacagaga 200
agcaacagaa atttcccatg tctactttg caatgtaacc cagagggtat 250
cattctgggtt tgtgggttaca gacccttcaa aaaatcacac ccttcctgct 300
gttgagggtgc aatcagccat aagaatgaac aagaaccgga tcaacaatgc 350
cttcttttcta aatgaccaa ctctggaatt tttaaaaatc ccttcacac 400
ttgcaccacc catggacca tctgtgccca tctggattat tatatttgg 450
gtgatatttt gcatcatcat agttgcaatt gcactactga tttatcagg 500
gatctggcaa cgtagaagaa agaacaaaga accatctgaa gtggatgacg 550
ctgaagataa gtgtgaaaac atgatcacia ttgaaaatgg catcccctct 600
gatcccctgg acatgaagg gggcatatta atgatgcctt catgacagag 650
gatgagaggc tcacccctct ctgaagggtt gttgttctgc ttcctcaaga 700
aattaaacat ttgtttctgt gtgactgctg agcatcctga aataccaaga 750
gcagatcata tattttgttt caccattctt cttttgtaat aaattttgaa 800
tgtgcttgaa agtgaaaagc aatcaattat accaccaac accactgaaa 850
tcataagcta ttcacgactc aaaatattct aaaatatttt tctgacagta 900
tagtgataaa atgtgggtcat gtggtatttg tagttattga ttttaagcatt 950
tttagaaata agatcaggca tatgtatata ttttcacact tcaaagacct 1000
aaggaaaaat aaattttcca gtggagaata catataatat ggtgtagaaa 1050
tcattgaaaa tggatccttt ttgacgatca cttatatcac tctgtatatg 1100
actaagtaaa caaaagtgcg aagtaattat tgtaaatgga tggataaaaa 1150
tggaattact catatacagg gtggaatttt atcctgttat cacaccaaca 1200
gttgattata tattttctga atatcagccc ctaataggac aattctattt 1250

gttgaccatt tctacaattt gtaaaagtcc aatctgtgct aacttaataa 1300

agtaataatc atctcttttt aaaaaaaaaa aaaaaaaaaa aaaaaa 1346

<210> 387

<211> 212

<212> PRT

<213> Homo sapiens

<400> 387

Met Leu Trp Leu Leu Phe Phe Leu Val Thr Ala Ile His Ala Glu
1 5 10 15

Leu Cys Gln Pro Gly Ala Glu Asn Ala Phe Lys Val Arg Leu Ser
20 25 30

Ile Arg Thr Ala Leu Gly Asp Lys Ala Tyr Ala Trp Asp Thr Asn
35 40 45

Glu Glu Tyr Leu Phe Lys Ala Met Val Ala Phe Ser Met Arg Lys
50 55 60

Val Pro Asn Arg Glu Ala Thr Glu Ile Ser His Val Leu Leu Cys
65 70 75

Asn Val Thr Gln Arg Val Ser Phe Trp Phe Val Val Thr Asp Pro
80 85 90

Ser Lys Asn His Thr Leu Pro Ala Val Glu Val Gln Ser Ala Ile
95 100 105

Arg Met Asn Lys Asn Arg Ile Asn Asn Ala Phe Phe Leu Asn Asp
110 115 120

Gln Thr Leu Glu Phe Leu Lys Ile Pro Ser Thr Leu Ala Pro Pro
125 130 135

Met Asp Pro Ser Val Pro Ile Trp Ile Ile Ile Phe Gly Val Ile
140 145 150

Phe Cys Ile Ile Ile Val Ala Ile Ala Leu Leu Ile Leu Ser Gly
155 160 165

Ile Trp Gln Arg Arg Arg Lys Asn Lys Glu Pro Ser Glu Val Asp
170 175 180

Asp Ala Glu Asp Lys Cys Glu Asn Met Ile Thr Ile Glu Asn Gly
185 190 195

Ile Pro Ser Asp Pro Leu Asp Met Lys Gly Gly Ile Leu Met Met
200 205 210

Pro Ser

<210> 388

<211> 1371

<212> DNA

<213> Homo sapiens

<400> 388

aactcaaact cctctctctg ggaaaacgcg gtgcttgctc ctcccggagt 50

<210> 392
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 392
 gagaggactg cgggagtttg ggacctttgt gcagacgtgc tcatg 45

<210> 393
 <211> 471
 <212> DNA
 <213> Homo sapiens

<400> 393
 gcatttttgt ctgtgctccc tgatcttcag gtcaccacca tgaagttctt 50
 agcagtcctg gtactcttgg gagtttccat ctttctgggc tctgcccaga 100
 atccgacaac agctgctcca gctgacacgt atccagctac tggctcctgct 150
 gatgatgaag cccctgatgc tgaaaccact gctgctgcaa ccactgcgac 200
 cactgctgct cctaccactg caaccaccgc tgcttctacc actgctcgta 250
 aagacattcc agttttaccc aaatgggttg gggatctccc gaatggtaga 300
 gtgtgtccct gagatggaat cagcttgagt cttctgcaat tggtcacaac 350
 tattcatgct tcctgtgatt tcatccaact acttaccttg cctacgatat 400
 cccctttatc tctaatacgt ttattttctt tcaaataaaa aataactatg 450
 agcaacataa aaaaaaaaaa a 471

<210> 394
 <211> 90
 <212> PRT
 <213> Homo sapiens

<400> 394
 Met Lys Phe Leu Ala Val Leu Val Leu Leu Gly Val Ser Ile Phe
 1 5 10 15
 Leu Val Ser Ala Gln Asn Pro Thr Thr Ala Ala Pro Ala Asp Thr
 20 25 30
 Tyr Pro Ala Thr Gly Pro Ala Asp Asp Glu Ala Pro Asp Ala Glu
 35 40 45
 Thr Thr Ala Ala Ala Thr Thr Ala Thr Thr Ala Ala Pro Thr Thr
 50 55 60
 Ala Thr Thr Ala Ala Ser Thr Thr Ala Arg Lys Asp Ile Pro Val
 65 70 75
 Leu Pro Lys Trp Val Gly Asp Leu Pro Asn Gly Arg Val Cys Pro
 80 85 90

<210> 395
 <211> 25

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 395
gctccctgat cttcatgtca ccacc 25

<210> 396
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 396
cagggacaca ctctaccatt cgggag 26

<210> 397
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 397
ccatctttct ggtctctgcc cagaatccga caacagctgc tc 42

<210> 398
<211> 907
<212> DNA
<213> Homo sapiens

<400> 398
ggactctgaa ggtcccaagc agctgctgag gcccccaagg aagtgggtcc 50
aaccttggac ccctaggggt ctggatttgc tggttaacaa gataacctga 100
gggcaggacc ccatagggga atgctacctc ctgcccttcc acctgccctg 150
gtgttcacgg tggcctggtc cctccttgcc gagagagtgt cctgggtcag 200
ggacgcagag gacgctcaca gactccagcc ctttgttacc gagaggacac 250
ttggcaaggt ccagcgatgg tccggagtcc acacacagac tggcggcagg 300
gcaggagggg gacagttctg ttgtgcttgg ttggacagta agagggtctt 350
ggccagtcca ggggtggggg cggcaaaact cataaagaac cagaggggtct 400
gggccccggc cacagagtca tctgcccagc tcctctgctg ctggccagtg 450
ggagtggcac gaggtggggc tttgtgccag taaaaccaca ggctggattt 500
gcctgcgggc catgggtccct gtctagggca gcaattctca accttcttgc 550
tctcaggacc ccaaagagct ttcattgtat ctattgattt ttaccacatt 600
agcaattaaa actgagaaat gggccgggca cgggtgggtca cgcctgtaat 650

cccagcactt tgggaggccg aggcgggtgg atcacctgag atcaggagtt 700
 caagaccagc ctggccaaca tggtgaaacc ttgtctacta aaaatacaaa 750
 aaattagcca ggcacagtgg tgtgcactgg tagtcccagt tactcgggag 800
 gctgaggcag gaaaatcgct tgaaccacag aggcggacgt tgcggtgagc 850
 cgagatcgcg ccgctgattc cagcctgggc gacaagagtg agactccatc 900
 tcacaca 907

<210> 399
 <211> 120
 <212> PRT
 <213> Homo sapiens

<400> 399
 Met Leu Pro Pro Ala Leu Pro Pro Ala Leu Val Phe Thr Val Ala
 1 5 10 15
 Trp Ser Leu Leu Ala Glu Arg Val Ser Trp Val Arg Asp Ala Glu
 20 25 30
 Asp Ala His Arg Leu Gln Pro Phe Val Thr Glu Arg Thr Leu Gly
 35 40 45
 Lys Val Gln Arg Trp Ser Gly Val His Thr Gln Thr Gly Gly Arg
 50 55 60
 Ala Gly Gly Gly Gln Phe Cys Cys Ala Trp Leu Asp Ser Lys Arg
 65 70 75
 Val Leu Ala Ser Pro Gly Trp Gly Ala Ala Asn Ser Ile Lys Asn
 80 85 90
 Gln Arg Val Trp Ala Pro Ala Thr Glu Ser Ser Ala Gln Leu Leu
 95 100 105
 Cys Cys Trp Pro Val Gly Val Ala Arg Gly Gly Ala Leu Cys Gln
 110 115 120

<210> 400
 <211> 893
 <212> DNA
 <213> Homo sapiens

<400> 400
 gtcattgccag tgcctgctct gtgcctgctc tgggccctgg caatggtgac 50
 ccggcctgcc tcagcggccc ccatgggagg cccagaactg gcacagcatg 100
 aggagctgac cctgctcttc catgggaccc tgcagctggg ccaggccctc 150
 aacggtgtgt acaggaccac ggagggaagg ctgacaaagg ccaggaacag 200
 cctgggtctc tatggccgca caatagaact cctggggcag gaggtcagcc 250
 ggggccggga tgcagcccag gaacttcggg caagcctgtt ggagactcag 300
 atggaggagg atattctgca gctgcaggca gaggccacag ctgaggtgct 350
 gggggagggtg gcccaggcac agaaggtgct acgggacagc gtgcagcggc 400

tagaagtcca gctgaggagc gcctggctgg gccctgccta ccgagaattt 450
 gaggtcttaa aggctcacgc tgacaagcag agccacatcc tatgggccct 500
 cacaggccac gtgcagcggc agaggcggga gatgggtggca cagcagcatc 550
 ggctgcgaca gatccaggag agactccaca cagcggcgct cccagcctga 600
 atctgcctgg atggaactga ggaccaatca tgctgcaagg aacacttcca 650
 cgccccgtga ggccccctgtg cagggaggag ctgcctgttc actgggatca 700
 gccagggcgc cgggccccac ttctgagcac agagcagaga cagacgcagg 750
 cggggacaaa ggcagaggat gtagcccatc tggggagggg tggaggaagg 800
 acatgtaccc ttctatgcct acacaccctc cattaagca gagtcgtggc 850
 atttcaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 893

<210> 401
 <211> 198
 <212> PRT
 <213> Homo sapiens

<400> 401
 Met Pro Val Pro Ala Leu Cys Leu Leu Trp Ala Leu Ala Met Val
 1 5 10 15
 Thr Arg Pro Ala Ser Ala Ala Pro Met Gly Gly Pro Glu Leu Ala
 20 25 30
 Gln His Glu Glu Leu Thr Leu Leu Phe His Gly Thr Leu Gln Leu
 35 40 45
 Gly Gln Ala Leu Asn Gly Val Tyr Arg Thr Thr Glu Gly Arg Leu
 50 55 60
 Thr Lys Ala Arg Asn Ser Leu Gly Leu Tyr Gly Arg Thr Ile Glu
 65 70 75
 Leu Leu Gly Gln Glu Val Ser Arg Gly Arg Asp Ala Ala Gln Glu
 80 85 90
 Leu Arg Ala Ser Leu Leu Glu Thr Gln Met Glu Glu Asp Ile Leu
 95 100 105
 Gln Leu Gln Ala Glu Ala Thr Ala Glu Val Leu Gly Glu Val Ala
 110 115 120
 Gln Ala Gln Lys Val Leu Arg Asp Ser Val Gln Arg Leu Glu Val
 125 130 135
 Gln Leu Arg Ser Ala Trp Leu Gly Pro Ala Tyr Arg Glu Phe Glu
 140 145 150
 Val Leu Lys Ala His Ala Asp Lys Gln Ser His Ile Leu Trp Ala
 155 160 165
 Leu Thr Gly His Val Gln Arg Gln Arg Arg Glu Met Val Ala Gln
 170 175 180
 Gln His Arg Leu Arg Gln Ile Gln Glu Arg Leu His Thr Ala Ala

Leu Pro Ala

<210> 402
 <211> 1915
 <212> DNA
 <213> Homo sapiens

<400> 402

ggcaacatgg ctcagcaggc ttgcccaga gccatggcaa agaattggact 50
 tgtaatttgc atccttgtga tcaccttact cctggaccag accaccagcc 100
 acacatccag attaaaagcc aggaagcaca gcaaacgtcg agtgagagac 150
 aaggatggag atctgaagac tcaaattgaa aagctctgga cagaagtcaa 200
 tgccttgaag gaaattcaag ccctgcagac agtctgtctc cgaggcacta 250
 aagttcaca gaaatgctac cttgcttcag aaggtttgaa gcatttccat 300
 gaggccaatg aagactgcat ttccaaagga ggaatcctgg ttatccccag 350
 gaactccgac gaaatcaacg ccctccaaga ctatggtaaa aggagcctgc 400
 caggtgtcaa tgacttttgg ctgggcatca atgacatggc cacggaaggc 450
 aagtttggtg acgtcaacgg aatcgctatc tccttcctca actgggaccg 500
 tgcacagcct aacggtggca agcgagaaaa ctgtgtcctg ttctcccaat 550
 cagctcaggg caagtggagt gatgaggcct gtcgcagcag caagagatac 600
 atatgcgagt tcaccatccc taaataggtc tttctccaat gtgtcctcca 650
 agcaagattc atcataactt ataggttcat gatctctaag atcaagtaaa 700
 aatcataatt tttacttatt aaaaaattgc aacacaagat caatgtccat 750
 agcaatatga tagcatcagc caattttgct aacacatttc tttgggattt 800
 tgcccttctt ggggtatagg ggatcagaaa tattgatcca tgtgcacgca 850
 gataaaatgg cttctgctaa acagactaaa atctttctct ctagtctttc 900
 tcacttgtag aaaccagtt tgttttcaaa aaatcacagt agcaatgcaa 950
 ctcatcactc tagaaaagca agcttaggct acctgaaaga ttttcccttg 1000
 gaagtttagc gtatgtttga ctaacaaaaa ttccctacat cagagactct 1050
 aggtgctata taatccaaaa acttttcagc ctgttgctca ttctgtccca 1100
 tgctggcaat aataccttgt cagcccatta cccttatttt gaattgctcc 1150
 atctcctggg gggacttgta tcttgctctg catatcagaa cacaaacccc 1200
 tgaagaggtt ctgatttgat tttttttttt tcttcatgcc tacccttttt 1250
 ttggaagttt ccagccgcaa ttgaaatga aatgacaagg tgtatatattg 1300

atcaattttc attcccacca ttgcattaca acctctaact taaatgggta 1350
 accctaaggc atatcaaaga agcagattgc atgataaacg gaaatagaaa 1400
 aaaagaacct acattttattt tgcttttagca tccttactct cacctttttat 1450
 gagattgaga gtggacttac atttcctttt ttacattttc gtatatattat 1500
 ttttttttagc catcattata tgtttaagtc tattatgggc aaccaatctt 1550
 tggaagctga aaactgaatt taaagaatgc tatcttggaa aattgcatac 1600
 gtctgtgcaa ttttttattc tgcctagtgc tattctgctt gtttaactag 1650
 attgtacaaa ataacttcat tgcttaatat caaattacaa agtttagact 1700
 tggagggaaa tgggcttttt agaagcaaac aatttttaaat atattttgtt 1750
 cttcaaataa atagtgttta aacattgaat gtgttttgtg aacaatatcc 1800
 cactttgcaa actttaacta cacatgcttg gaattaagtt ttagctgttt 1850
 tcattgctca ataataaagc ctgaattctg atcaataaaa aaaaaaaaaa 1900
 aaaaaaaaaa aaaaa 1915

<210> 403
 <211> 206
 <212> PRT
 <213> Homo sapiens

<400> 403
 Met Ala Gln Gln Ala Cys Pro Arg Ala Met Ala Lys Asn Gly Leu
 1 5 10 15
 Val Ile Cys Ile Leu Val Ile Thr Leu Leu Leu Asp Gln Thr Thr
 20 25 30
 Ser His Thr Ser Arg Leu Lys Ala Arg Lys His Ser Lys Arg Arg
 35 40 45
 Val Arg Asp Lys Asp Gly Asp Leu Lys Thr Gln Ile Glu Lys Leu
 50 55 60
 Trp Thr Glu Val Asn Ala Leu Lys Glu Ile Gln Ala Leu Gln Thr
 65 70 75
 Val Cys Leu Arg Gly Thr Lys Val His Lys Lys Cys Tyr Leu Ala
 80 85 90
 Ser Glu Gly Leu Lys His Phe His Glu Ala Asn Glu Asp Cys Ile
 95 100 105
 Ser Lys Gly Gly Ile Leu Val Ile Pro Arg Asn Ser Asp Glu Ile
 110 115 120
 Asn Ala Leu Gln Asp Tyr Gly Lys Arg Ser Leu Pro Gly Val Asn
 125 130 135
 Asp Phe Trp Leu Gly Ile Asn Asp Met Val Thr Glu Gly Lys Phe
 140 145 150
 Val Asp Val Asn Gly Ile Ala Ile Ser Phe Leu Asn Trp Asp Arg

| | | | | | |
|---|-----|--|-----|--|-----|
| | 155 | | 160 | | 165 |
| Ala Gln Pro Asn Gly Gly Lys Arg Glu Asn Cys Val Leu Phe Ser | | | | | |
| | 170 | | 175 | | 180 |
| Gln Ser Ala Gln Gly Lys Trp Ser Asp Glu Ala Cys Arg Ser Ser | | | | | |
| | 185 | | 190 | | 195 |
| Lys Arg Tyr Ile Cys Glu Phe Thr Ile Pro Lys | | | | | |
| | 200 | | 205 | | |

<210> 404
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 404
 cctggttatc cccaggaact ccgac 25

<210> 405
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 405
 ctcttgctgc tgcgacaggc ctc 23

<210> 406
 <211> 46
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 406
 cgccctccaa gactatggta aaaggagcct gccaggtgtc aatgac 46

<210> 407
 <211> 570
 <212> DNA
 <213> Homo sapiens

<400> 407
 gcgaggaccg ggtataagaa gcctcgtggc cttgcccggg cagccgcagg 50
 ttccccgcgc gccccgagcc ccgcgcgat gaagctcgcc gccctcctgg 100
 ggctctgcgt ggccctgtcc tgcagctccg ctgctgcttt cttagtgggc 150
 tcggccaagc ctgtggccca gcctgtogct gcgctggagt cggcggcgga 200
 ggccggggcc gggaccctgg ccaacccct cggcaccctc aaccgcgtga 250
 agctcctgct gagcagcctg ggcatccccg tgaaccacct catagagggc 300
 tcccagaagt gtgtggctga gctgggtccc caggccgtgg gggccgtgaa 350

ggccctgaag gccctgctgg gggccctgac agtgtttggc tgagccgaga 400
 ctggagcatc tacacctgag gacaagacgc tgcccacccg cgaggggtga 450
 aaaccccgcc gcggggagga ccgtccatcc ccttcccccg gcccctctca 500
 ataaacgtgg ttaagagcaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 550
 aaaaaaaaaa aaaaaaaaaa 570

<210> 408
 <211> 104
 <212> PRT
 <213> Homo sapiens

<400> 408
 Met Lys Leu Ala Ala Leu Leu Gly Leu Cys Val Ala Leu Ser Cys
 1 5 10 15
 Ser Ser Ala Ala Ala Phe Leu Val Gly Ser Ala Lys Pro Val Ala
 20 25 30
 Gln Pro Val Ala Ala Leu Glu Ser Ala Ala Glu Ala Gly Ala Gly
 35 40 45
 Thr Leu Ala Asn Pro Leu Gly Thr Leu Asn Pro Leu Lys Leu Leu
 50 55 60
 Leu Ser Ser Leu Gly Ile Pro Val Asn His Leu Ile Glu Gly Ser
 65 70 75
 Gln Lys Cys Val Ala Glu Leu Gly Pro Gln Ala Val Gly Ala Val
 80 85 90
 Lys Ala Leu Lys Ala Leu Leu Gly Ala Leu Thr Val Phe Gly
 95 100

<210> 409
 <211> 2089
 <212> DNA
 <213> Homo sapiens

<400> 409
 tgaaggactt ttccaggacc caaggccaca cactggaagt cttgcagctg 50
 aagggaggca ctcttggtcc tccgcagccg atcacatgaa ggtggtgcca 100
 agtctcctgc tctccgtcct cctggcacag gtgtggctgg taccggctt 150
 ggccccagc cctcagtcgc cagagacccc agcccctcag aaccagacca 200
 gcagggtagt gcaggctccc agggaggaag aggaagatga gcaggaggcc 250
 agcgaggaga aggccggtga ggaagagaaa gcctggctga tggccagcag 300
 gcagcagctt gccaaaggaga cttcaaactt cggattcagc ctgctgcaa 350
 agatctccat gaggcacgat ggcaacatgg ttttctctcc atttggcatg 400
 tccttgcca tgacaggctt gatgctgggg gccacagggc cgactgaaac 450
 ccagatcaag agagggtcc acttgcaggc cctgaagccc accaagccc 500

ggctcctgcc ttccctcttt aagggaactca gagagacct ctcccgaac 550
 ctggaactgg gcctctcaca ggggagtttt gccttcatcc acaaggattt 600
 tgatgtcaaa gagactttct tcaatttatc caagaggtat ttgatacag 650
 agtgcggtgcc tatgaatttt cgcaatgcct cacaggccaa aaggctcatg 700
 aatcattaca ttaacaaaga gactcggggg aaaattccca aactgtttga 750
 tgagattaat cctgaaacca aattaattct tgtggattac atcttgttca 800
 aagggaatg gttgaccca tttgacctg tcttcaccga agtcgacact 850
 ttccacctgg acaagtacaa gaccattaag gtgcccata tgtacgggtg 900
 aggcaagttt gcctccacct ttgacaagaa ttttcgttgt catgtcctca 950
 aactgcccta ccaaggaaat gccaccatgc tgggtggtcct catggagaaa 1000
 atgggtgacc acctcgccct tgaagactac ctgaccacag acttggtgga 1050
 gacatggctc agaaacatga aaaccagaaa catggaagtt ttctttccga 1100
 agttcaagct agatcagaag tatgagatgc atgagctgct taggcagatg 1150
 ggaatcagaa gaatcttctc accctttgct gaccttagtg aactctcagc 1200
 tactggaaga aatctccaag tatccagggt tttacgaaga acagtgattg 1250
 aagttgatga aaggggcact gaggcagtgg caggaatctt gtcagaaatt 1300
 actgcttatt ccatgcctcc tgtcatcaaa gtggaccggc catttcattt 1350
 catgatctat gaagaaacct ctggaatgct tctgtttctg ggcaggggtg 1400
 tgaatccgac tctcctataa ttcaggacat gcataagcac ttcgtgctgt 1450
 agtagatgct gaatctgagg tatcaaacac acacaggata ccagcaatgg 1500
 atggcagggg agagtgttcc tttgttctt aactagttaa ggggtgttctc 1550
 aaataaatac agtagtcccc acttatctga gggggataca ttcaaagacc 1600
 cccagcagat gcctgaaacg gtggacagtg ctgaacctta tatatatattt 1650
 ttctacaca tacataccta tgataaagtt taatttataa attaggcaca 1700
 gtaagagatt aacaataata acaacattaa gtaaaatgag ttacttgaac 1750
 gcaagcactg caataccata acagtcaaac tgattataga gaaggctact 1800
 aagtgactca tgggcgagga gcatagacag tgtggagaca ttgggcaagg 1850
 ggagaattca catcctgggt gggacagagc aggacgatgc aagattccat 1900
 cccactactc agaatggcat gctgcttaag acttttagat tgtttatattc 1950
 tggaattttt catttaatgt ttttgacca tggttgacca tggttaactg 2000
 agactgcaga aagcaaaacc atggataagg gaggactact acaaaagcat 2050
 taaattgata catatattttt aaaaaaaaaa aaaaaaaaaa 2089

<210> 410
 <211> 444
 <212> PRT
 <213> Homo sapiens

<400> 410

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Val | Val | Pro | Ser | Leu | Leu | Leu | Ser | Val | Leu | Leu | Ala | Gln |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Val | Trp | Leu | Val | Pro | Gly | Leu | Ala | Pro | Ser | Pro | Gln | Ser | Pro | Glu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Thr | Pro | Ala | Pro | Gln | Asn | Gln | Thr | Ser | Arg | Val | Val | Gln | Ala | Pro |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Arg | Glu | Glu | Glu | Glu | Asp | Glu | Gln | Glu | Ala | Ser | Glu | Glu | Lys | Ala |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Gly | Glu | Glu | Glu | Lys | Ala | Trp | Leu | Met | Ala | Ser | Arg | Gln | Gln | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ala | Lys | Glu | Thr | Ser | Asn | Phe | Gly | Phe | Ser | Leu | Leu | Arg | Lys | Ile |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ser | Met | Arg | His | Asp | Gly | Asn | Met | Val | Phe | Ser | Pro | Phe | Gly | Met |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ser | Leu | Ala | Met | Thr | Gly | Leu | Met | Leu | Gly | Ala | Thr | Gly | Pro | Thr |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Glu | Thr | Gln | Ile | Lys | Arg | Gly | Leu | His | Leu | Gln | Ala | Leu | Lys | Pro |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Thr | Lys | Pro | Gly | Leu | Leu | Pro | Ser | Leu | Phe | Lys | Gly | Leu | Arg | Glu |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Thr | Leu | Ser | Arg | Asn | Leu | Glu | Leu | Gly | Leu | Ser | Gln | Gly | Ser | Phe |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ala | Phe | Ile | His | Lys | Asp | Phe | Asp | Val | Lys | Glu | Thr | Phe | Phe | Asn |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Leu | Ser | Lys | Arg | Tyr | Phe | Asp | Thr | Glu | Cys | Val | Pro | Met | Asn | Phe |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Arg | Asn | Ala | Ser | Gln | Ala | Lys | Arg | Leu | Met | Asn | His | Tyr | Ile | Asn |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Lys | Glu | Thr | Arg | Gly | Lys | Ile | Pro | Lys | Leu | Phe | Asp | Glu | Ile | Asn |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Pro | Glu | Thr | Lys | Leu | Ile | Leu | Val | Asp | Tyr | Ile | Leu | Phe | Lys | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Lys | Trp | Leu | Thr | Pro | Phe | Asp | Pro | Val | Phe | Thr | Glu | Val | Asp | Thr |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Phe | His | Leu | Asp | Lys | Tyr | Lys | Thr | Ile | Lys | Val | Pro | Met | Met | Tyr |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Gly | Ala | Gly | Lys | Phe | Ala | Ser | Thr | Phe | Asp | Lys | Asn | Phe | Arg | Cys |
| | | | | 275 | | | | | 280 | | | | | 285 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Val | Leu | Lys | Leu | Pro | Tyr | Gln | Gly | Asn | Ala | Thr | Met | Leu | Val | 290 | 295 | 300 |
| Val | Leu | Met | Glu | Lys | Met | Gly | Asp | His | Leu | Ala | Leu | Glu | Asp | Tyr | 305 | 310 | 315 |
| Leu | Thr | Thr | Asp | Leu | Val | Glu | Thr | Trp | Leu | Arg | Asn | Met | Lys | Thr | 320 | 325 | 330 |
| Arg | Asn | Met | Glu | Val | Phe | Phe | Pro | Lys | Phe | Lys | Leu | Asp | Gln | Lys | 335 | 340 | 345 |
| Tyr | Glu | Met | His | Glu | Leu | Leu | Arg | Gln | Met | Gly | Ile | Arg | Arg | Ile | 350 | 355 | 360 |
| Phe | Ser | Pro | Phe | Ala | Asp | Leu | Ser | Glu | Leu | Ser | Ala | Thr | Gly | Arg | 365 | 370 | 375 |
| Asn | Leu | Gln | Val | Ser | Arg | Val | Leu | Arg | Arg | Thr | Val | Ile | Glu | Val | 380 | 385 | 390 |
| Asp | Glu | Arg | Gly | Thr | Glu | Ala | Val | Ala | Gly | Ile | Leu | Ser | Glu | Ile | 395 | 400 | 405 |
| Thr | Ala | Tyr | Ser | Met | Pro | Pro | Val | Ile | Lys | Val | Asp | Arg | Pro | Phe | 410 | 415 | 420 |
| His | Phe | Met | Ile | Tyr | Glu | Glu | Thr | Ser | Gly | Met | Leu | Leu | Phe | Leu | 425 | 430 | 435 |
| Gly | Arg | Val | Val | Asn | Pro | Thr | Leu | Leu | | | | | | | 440 | | |

<210> 411
 <211> 636
 <212> DNA
 <213> Homo sapiens

<400> 411
 ctgggatcag ccactgcagc tccctgagca ctctctacag agacgcggac 50
 cccagacatg aggaggctcc tcttggtcac cagcctggtg gttgtgctgc 100
 tgtgggaggc aggtgcagtc ccagcaccca aggtccctat caagatgcaa 150
 gtcaaacact ggccctcaga gcaggaccca gagaaggcct ggggcgccccg 200
 tgtggtggag cctccggaga aggacgacca gctggtggtg ctgttccctg 250
 tccagaagcc gaaactcttg accaccgagg agaagccacg aggtcagggc 300
 aggggccccca tccttcagc caccaaggcc tggatggaga ccgaggacac 350
 cctgggcccgt gtctgagtc ccgagcccga ccatgacagc ctgtaccacc 400
 ctccgcctga ggaggaccag ggcgaggaga ggccccggtt gtgggtgatg 450
 ccaaatcacc aggtgctcct gggaccggag gaagaccaag accacatcta 500
 ccacccccag tagggctcca ggggccatca ctgccccgc cctgtcccaa 550
 ggcccaggct gttgggactg ggaccctccc taccctgccc cagctagaca 600

aataaacccc agcaggcaaa aaaaaaaaaa aaaaaa 636

<210> 412
<211> 151
<212> PRT
<213> Homo sapiens

<400> 412
Met Arg Arg Leu Leu Leu Val Thr Ser Leu Val Val Val Leu Leu
1 5 10 15
Trp Glu Ala Gly Ala Val Pro Ala Pro Lys Val Pro Ile Lys Met
20 25 30
Gln Val Lys His Trp Pro Ser Glu Gln Asp Pro Glu Lys Ala Trp
35 40 45
Gly Ala Arg Val Val Glu Pro Pro Glu Lys Asp Asp Gln Leu Val
50 55 60
Val Leu Phe Pro Val Gln Lys Pro Lys Leu Leu Thr Thr Glu Glu
65 70 75
Lys Pro Arg Gly Gln Gly Arg Gly Pro Ile Leu Pro Gly Thr Lys
80 85 90
Ala Trp Met Glu Thr Glu Asp Thr Leu Gly Arg Val Leu Ser Pro
95 100 105
Glu Pro Asp His Asp Ser Leu Tyr His Pro Pro Pro Glu Glu Asp
110 115 120
Gln Gly Glu Glu Arg Pro Arg Leu Trp Val Met Pro Asn His Gln
125 130 135
Val Leu Leu Gly Pro Glu Glu Asp Gln Asp His Ile Tyr His Pro
140 145 150
Gln

<210> 413
<211> 1176
<212> DNA
<213> Homo sapiens

<400> 413
agaaagctgc actctgttga gctccagggc gcagtggagg gagggagtga 50
aggagctctc tgtacccaag gaaagtgcag ctgagactca gacaagatta 100
caatgaacca actcagcttc ctgctgtttc tcatagcgac caccagagga 150
tggagtacag atgaggctaa tacttacttc aaggaatgga cctgttcttc 200
gtctccatct ctgccagaa gctgcaagga aatcaaagac gaatgtccta 250
gtgcatttga tggcctgtat tttctcgcga ctgagaatgg tggtatctac 300
cagaccttct gtgacatgac ctctgggggt ggcggtgga ccctgggtggc 350
cagcgtgcat gagaatgaca tgogtgggaa gtgcacggtg ggcatcgct 400

ggtccagtca gcagggcagc aaagcagact acccagaggg ggacggcaac 450
 tgggccaact acaacacott tggatctgca gaggcggcca cgagcgatga 500
 ctacaagaac cctggctact acgacatcca ggccaaggac ctgggcatct 550
 ggcacgtgcc caataagtcc cccatgcagc actggagaaa cagctccctg 600
 ctgaggtacc gcacggacac tggttctctc cagacactgg gacataatct 650
 gtttggcatc taccagaaat atccagtga atatggagaa ggaaagtgtt 700
 ggactgacaa cggcccgtg atccctgtgg tctatgattt tggcgacgcc 750
 cagaaaacag catcttatta ctaccctat ggccagcggg aattcactgc 800
 gggatttgtt cagttcaggg tatttaataa cgagagagca gccaacgcct 850
 tgtgtgctgg aatgagggc accggatgta aactgagca tcaactgcatt 900
 ggtggaggag gatactttcc agaggccagt cccagcagt gtggagattt 950
 ttctggtttt gattggagt gatatggaac tcatgttggg tacagcagca 1000
 gccgtgagat aactgaggca gctgtgcttc tattctatcg ttgagagttt 1050
 tgtgggaggg aaccagacc tctcctcca accatgagat cccaaggatg 1100
 gagaacaact taccagtag ctagaatgtt aatggcagaa gagaaaacaa 1150
 taaatcatat tgactcaaga aaaaaa 1176

<210> 414
 <211> 313
 <212> PRT
 <213> Homo sapiens

<400> 414
 Met Asn Gln Leu Ser Phe Leu Leu Phe Leu Ile Ala Thr Thr Arg
 1 5 10 15
 Gly Trp Ser Thr Asp Glu Ala Asn Thr Tyr Phe Lys Glu Trp Thr
 20 25 30
 Cys Ser Ser Ser Pro Ser Leu Pro Arg Ser Cys Lys Glu Ile Lys
 35 40 45
 Asp Glu Cys Pro Ser Ala Phe Asp Gly Leu Tyr Phe Leu Arg Thr
 50 55 60
 Glu Asn Gly Val Ile Tyr Gln Thr Phe Cys Asp Met Thr Ser Gly
 65 70 75
 Gly Gly Gly Trp Thr Leu Val Ala Ser Val His Glu Asn Asp Met
 80 85 90
 Arg Gly Lys Cys Thr Val Gly Asp Arg Trp Ser Ser Gln Gln Gly
 95 100 105
 Ser Lys Ala Asp Tyr Pro Glu Gly Asp Gly Asn Trp Ala Asn Tyr
 110 115 120
 Asn Thr Phe Gly Ser Ala Glu Ala Ala Thr Ser Asp Asp Tyr Lys

ccacaatagt tcagtgacat ctgctgcttc atcagtaaca atcacaacaa 550
ctatgcattc tgaagcaaag aaaggatcaa aatttgatac tgggagcttt 600
gttgggtggtta ttgtattaac gctgggagtt ttatctattc tttacattgg 650
atgcaaaatg tattactcaa gaagaggcat tcggtatcga accatagatg 700
aacatgatgc catcatttaa ggaaatccat ggaccaagga tggaatacag 750
attgatgctg ccctatcaat taattttggt ttattaatag tttaaaacaa 800
tattctcttt ttgaaaatag tataaacagg ccatgcatat aatgtacagt 850
gtattacgta aatatgtaaa gattcttcaa ggtaacaagg gtttggtttt 900
tgaaataaac atctggatct tatagaccgt tcatacaatg gtttttagcaa 950
gttcatagta agacaaacaa gtcctatctt ttttttttgg ctggggtggg 1000
ggcattggtc acatatgacc agtaattgaa agacgtcatc actgaaagac 1050
agaatgccat ctgggcatac aaataagaag tttgtcacag cactcaggat 1100
tttgggtatc ttttgtagct cacataaaga acttcagtgc ttttcagagc 1150
tggatatatc ttaattacta atgccacaca gaaattatac aatcaaacta 1200
gatctgaagc ataatttaag aaaaacatca acattttttg tgctttaaac 1250
tgtagtagtt ggtctagaaa caaaatactc c 1281

<210> 416
<211> 208
<212> PRT
<213> Homo sapiens

<400> 416
Met Gly Leu Gly Ala Arg Gly Ala Trp Ala Ala Leu Leu Leu Gly
1 5 10 15
Thr Leu Gln Val Leu Ala Leu Leu Gly Ala Ala His Glu Ser Ala
20 25 30
Ala Met Ala Ala Ser Ala Asn Ile Glu Asn Ser Gly Leu Pro His
35 40 45
Asn Ser Ser Ala Asn Ser Thr Glu Thr Leu Gln His Val Pro Ser
50 55 60
Asp His Thr Asn Glu Thr Ser Asn Ser Thr Val Lys Pro Pro Thr
65 70 75
Ser Val Ala Ser Asp Ser Ser Asn Thr Thr Val Thr Thr Met Lys
80 85 90
Pro Thr Ala Ala Ser Asn Thr Thr Thr Pro Gly Met Val Ser Thr
95 100 105
Asn Met Thr Ser Thr Thr Leu Lys Ser Thr Pro Lys Thr Thr Ser
110 115 120
Val Ser Gln Asn Thr Ser Gln Ile Ser Thr Ser Thr Met Thr Val

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 125 | | 130 | | 135 |
| Thr His Asn Ser | Ser Val Thr Ser Ala | Ala Ser Ser Val Thr | Ile | | |
| | 140 | 145 | 150 | | |
| Thr Thr Thr Met | His Ser Glu Ala Lys | Lys Gly Ser Lys Phe | Asp | | |
| | 155 | 160 | 165 | | |
| Thr Gly Ser Phe | Val Gly Gly Ile Val | Leu Thr Leu Gly Val | Leu | | |
| | 170 | 175 | 180 | | |
| Ser Ile Leu Tyr | Ile Gly Cys Lys Met | Tyr Tyr Ser Arg Arg | Gly | | |
| | 185 | 190 | 195 | | |
| Ile Arg Tyr Arg | Thr Ile Asp Glu His | Asp Ala Ile Ile | | | |
| | 200 | 205 | | | |

<210> 417
 <211> 1728
 <212> DNA
 <213> Homo sapiens

<400> 417
 cagccggggtc ccaagcctgt gcctgagcct gagcctgagc ctgagcccca 50
 gccggggagcc ggtcgcgggg gtcctggggt gtgggaccgc tgggccccca 100
 gcgatggcga ccctgtgggg aggccttctt cggcttggct ccttgctcag 150
 cctgtcgtgc ctggcgcttt ccgtgctgct gctggcgag ctgtcagacg 200
 ccgccaagaa ttctgaggat gtcagatgta aatgtatctg ccctccctat 250
 aaagaaaatt ctgggcatat ttataataag aacatatctc agaaagattg 300
 tgattgcctt catgttggtg agcccatgcc tgtgcggggg cctgatgtag 350
 aagcatactg totacgctgt gaatgcaa atgaagaaag aagctctgtc 400
 acaatcaagg ttaccattat aatttatctc tccattttgg gccttctact 450
 tctgtacatg gtatatctta ctctgggtga gcccatactg aagaggcgcc 500
 tctttggaca tgcacagttg atacagagt atgatgat tggggatcac 550
 cagccttttg caaatgcaca cgatgtgcta gcccgctccc gcagtcgagc 600
 caacgtgctg aacaaggtag aatatgcaca gcagcgctgg aagcttcaag 650
 tccaagagca gcgaaagtct gtctttgacc ggcatgttgt cctcagctaa 700
 ttgggaattg aattcaagg gactagaaag aaacaggcag acaactggaa 750
 agaactgact gggttttgct gggtttcatt ttaatacctt gttgatttca 800
 ccaactgttg ctggaagatt caaaactgga agcaaaaact tgcttgattt 850
 ttttttcttg ttaacgtaat aatagagaca tttttaaaag cacacagctc 900
 aaagtcagcc aataagtctt ttcctatttg tgacttttac taataaaaat 950
 aaatctgcct gtaaattatc ttgaagtctt ttacctggaa caagcactct 1000

ctttttcacc acatagtttt aacttgactt tcaagataat tttcaggggtt 1050
 tttgttggtg ttgttttttg tttgtttggt ttggtgggag aggggagggga 1100
 tgccctgggaa gtgggttaaca acttttttca agtcacttta ctaaacaac 1150
 ttttgtaaag agaccttacc ttctattttc gagtttcatt tatattttgc 1200
 agtgtagcca gcctcatcaa agagctgact tactcatttg acttttgcac 1250
 tgactgtatt atctgggtat ctgctgtgtc tgcacttcat ggtaaacggg 1300
 atctaaaatg cctgggtggct tttcacaaaa agcagatttt cttcatgtac 1350
 tgtgatgtct gatgcaatgc atcctagaac aaactggcca tttgctagtt 1400
 tactctaaag actaaacata gtcttggtgt gtgtgggtctt actcatcttc 1450
 tagtaccttt aaggacaaat cctaaggact tggacacttg caataaagaa 1500
 attttatttt aaaccaagc ctccctggat tgataatata tacacatttg 1550
 tcagcatttc cggtcgtggg gagaggcagc tgtttgagct ccaatatgtg 1600
 cagctttgaa ctagggctgg ggttggtggg gcctcttctg aaaggtctaa 1650
 ccattattgg ataactggct tttttcttcc tatgtcctct ttggaatgta 1700
 acaataaaaa taatttttga aacatcaa 1728

<210> 418
 <211> 198
 <212> PRT
 <213> Homo sapiens

<400> 418
 Met Ala Thr Leu Trp Gly Gly Leu Leu Arg Leu Gly Ser Leu Leu
 1 5 10 15
 Ser Leu Ser Cys Leu Ala Leu Ser Val Leu Leu Leu Ala Gln Leu
 20 25 30
 Ser Asp Ala Ala Lys Asn Phe Glu Asp Val Arg Cys Lys Cys Ile
 35 40 45
 Cys Pro Pro Tyr Lys Glu Asn Ser Gly His Ile Tyr Asn Lys Asn
 50 55 60
 Ile Ser Gln Lys Asp Cys Asp Cys Leu His Val Val Glu Pro Met
 65 70 75
 Pro Val Arg Gly Pro Asp Val Glu Ala Tyr Cys Leu Arg Cys Glu
 80 85 90
 Cys Lys Tyr Glu Glu Arg Ser Ser Val Thr Ile Lys Val Thr Ile
 95 100 105
 Ile Ile Tyr Leu Ser Ile Leu Gly Leu Leu Leu Leu Tyr Met Val
 110 115 120
 Tyr Leu Thr Leu Val Glu Pro Ile Leu Lys Arg Arg Leu Phe Gly
 125 130 135

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Ala | Gln | Leu | Ile | Gln | Ser | Asp | Asp | Asp | Ile | Gly | Asp | His | Gln |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Pro | Phe | Ala | Asn | Ala | His | Asp | Val | Leu | Ala | Arg | Ser | Arg | Ser | Arg |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ala | Asn | Val | Leu | Asn | Lys | Val | Glu | Tyr | Ala | Gln | Gln | Arg | Trp | Lys |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Leu | Gln | Val | Gln | Glu | Gln | Arg | Lys | Ser | Val | Phe | Asp | Arg | His | Val |
| | | | | 185 | | | | | 190 | | | | | 195 |

Val Leu Ser

<210> 419
 <211> 681
 <212> DNA
 <213> Homo sapiens

<400> 419
 gcacctgcga ccaccgtgag cagtcattggc gtactccaca gtgcagagag 50
 tcgctctggc ttctgggctt gtcttggtc tgctgctgct gctgccaag 100
 gccttctgt cccgcgggaa gcggcaggag ccgccgccga cacctgaagg 150
 aaaattgggc cgatttccac ctatgatgca tcatcaccag gcacctcag 200
 atggccagac tcctggggct cgtttccaga ggtctcacct tgccgaggca 250
 tttgcaaagg ccaaaggatc aggtggaggt gctggaggag gaggtagtgg 300
 aagaggtctg atggggcaga ttattccaat ctacggtttt gggatttttt 350
 tatatatact gtacattcta tttaaggtaa gtagaatcat cctaatacata 400
 ttacatcaat gaaaatctaa tatggcgata aaaatcattg tctacattaa 450
 aacttcttat agttcataaa attatttcaa atccatcatc tctttaaatc 500
 ctgcctcctc ttcatgaggt acttaggata gccattattt cagtttcaca 550
 taagaatgtt tactcaatgt ttaagtgttt tgccccaaaa ttcacaacta 600
 acaaggcaga actaggactt gaacatggat cttttggttc ttaatccagt 650
 gagtataca attcaatgca ctcccctgcc a 681

<210> 420
 <211> 128
 <212> PRT
 <213> Homo sapiens

<400> 420
 Met Ala Tyr Ser Thr Val Gln Arg Val Ala Leu Ala Ser Gly Leu
 1 5 10 15
 Val Leu Ala Leu Ser Leu Leu Leu Pro Lys Ala Phe Leu Ser Arg
 20 25 30
 Gly Lys Arg Gln Glu Pro Pro Pro Thr Pro Glu Gly Lys Leu Gly
 35 40 45

Arg Phe Pro Pro Met Met His His His Gln Ala Pro Ser Asp Gly
50 55 60

Gln Thr Pro Gly Ala Arg Phe Gln Arg Ser His Leu Ala Glu Ala
65 70 75

Phe Ala Lys Ala Lys Gly Ser Gly Gly Gly Ala Gly Gly Gly Gly
80 85 90

Ser Gly Arg Gly Leu Met Gly Gln Ile Ile Pro Ile Tyr Gly Phe
95 100 105

Gly Ile Phe Leu Tyr Ile Leu Tyr Ile Leu Phe Lys Val Ser Arg
110 115 120

Ile Ile Leu Ile Ile Leu His Gln
125

<210> 421
<211> 1630
<212> DNA
<213> Homo sapiens

<400> 421
cggctcgagt gcagctgtgg ggagatttca gtgcattgcc tcccctgggt 50
gctcttcac tcgtgattga aagttgagag cagcatgttt tgcccactga 100
aactcatcct gctgccagtg ttactggatt attccttggg cctgaatgac 150
ttgaatgttt ccccgccctga gctaacagtc catgtgggtg attcagctct 200
gatgggatgt gttttccaga gcacagaaga caaatgtata ttcaagatag 250
actggactct gtcaccagga gagcacgcca aggacgaata tgtgctatac 300
tattactcca atctcagtgt gcctattggg cgcttccaga accgcgtaca 350
cttgatgggg gacatcttat gcaatgatgg ctctctcctg ctccaagatg 400
tgcaagaggc tgaccaggga acctatatct gtgaaatccg cctcaaaggg 450
gagagccagg tgttcaagaa ggcggtggtg ctgcatgtgc ttccagagga 500
gccc aaagag ctcatggtcc atgtgggtgg attgattcag atgggatgtg 550
ttttccagag cacagaagtg aaacacgtga ccaaggtaga atggatattt 600
tcaggacggc ggcgaaagga ggagattgta tttcgttact accacaaact 650
caggatgtct gtggagtact cccagagctg gggccacttc cagaatcgtg 700
tgaacctggt gggggacatt ttccgcaatg acggttccat catgcttcaa 750
ggagtgaggg agtcagatgg aggaaactac acctgcagta tccacctagg 800
gaacctggtg ttcaagaaaa ccattgtgct gcatgtcagc ccggaagagc 850
ctogaacact ggtgaccccg gcagccctga ggcctctggt cttgggtggt 900
aatcagttgg tgatcattgt gggaattgtc tgtgccacaa tctgtctgct 950
ccctgttctg atattgatcg tgaagaagac ctgtggaaat aagagttcag 1000

tgaattctac agtcttggtg aagaacacga agaagactaa tccagagata 1050
aaagaaaaac cctgccattt tgaaagatgt gaaggggaga aacacattta 1100
ctccccaata attgtacggg aggtgatcga ggaagaagaa ccaagtgaaa 1150
aatcagaggc cacctacatg accatgcacc cagtttggcc ttctctgagg 1200
tcagatcgga acaactcact tgaaaaaaag tcaggtgggg gaatgccaaa 1250
aacacagcaa gcctttttgag aagaatggag agtcccttca tctcagcagc 1300
gggtggagact ctctcctgtg tgtgtcctgg gccactctac cagtgatattc 1350
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aactggccc tggaaccag gctgagctga gtggcctcaa accccccgtt 1550
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gaatcagaga taaaaaccaa cccaaatcaa 1630

<210> 422
<211> 394
<212> PRT
<213> Homo sapiens

<400> 422
Met Phe Cys Pro Leu Lys Leu Ile Leu Leu Pro Val Leu Leu Asp
1 5 10 15
Tyr Ser Leu Gly Leu Asn Asp Leu Asn Val Ser Pro Pro Glu Leu
20 25 30
Thr Val His Val Gly Asp Ser Ala Leu Met Gly Cys Val Phe Gln
35 40 45
Ser Thr Glu Asp Lys Cys Ile Phe Lys Ile Asp Trp Thr Leu Ser
50 55 60
Pro Gly Glu His Ala Lys Asp Glu Tyr Val Leu Tyr Tyr Tyr Ser
65 70 75
Asn Leu Ser Val Pro Ile Gly Arg Phe Gln Asn Arg Val His Leu
80 85 90
Met Gly Asp Ile Leu Cys Asn Asp Gly Ser Leu Leu Leu Gln Asp
95 100 105
Val Gln Glu Ala Asp Gln Gly Thr Tyr Ile Cys Glu Ile Arg Leu
110 115 120
Lys Gly Glu Ser Gln Val Phe Lys Lys Ala Val Val Leu His Val
125 130 135
Leu Pro Glu Glu Pro Lys Glu Leu Met Val His Val Gly Gly Leu
140 145 150
Ile Gln Met Gly Cys Val Phe Gln Ser Thr Glu Val Lys His Val

acatcacctt aatatataaa actcggaaac cagctctcgt ctccgttggc 250
 cctgcatcct cctcctggtg gcgtgtgatg gctttgattc tgctgaccc 300
 gtgcgtgggg atggttgtcg ggctggtggc tctggggatt tgggtctgtca 350
 tgcagcgcaa ttacctacaa gatgagaatg aaaatcgac aggaactctg 400
 caacaattag caaagcgctt ctgtcaatat gtggtaaaac aatcagaact 450
 aaagggcact ttcaaaggtc ataaatgcag ccctgtgac acaaactgga 500
 gatattatgg agatagctgc tatgggttct tcaggcacia cttaacatgg 550
 gaagagagta agcagtactg cactgacatg aatgctactc tcctgaagat 600
 tgacaaccgg aacattgtgg agtacatcaa agccaggact catttaattc 650
 gttgggtcgg attatctcgc cagaagtcga atgaggtctg gaagtgggag 700
 gatggctcgg ttatctcaga aaatatgttt gagtttttgg aagatggaaa 750
 aggaaatatg aattgtgctt attttcataa tgggaaaatg caccctacct 800
 tctgtgagaa caaacattat ttaatgtgtg agaggaaggc tggcatgacc 850
 aaggtggacc aactacctta atgcaaagag gtggacagga taacacagat 900
 aagggtttta ttgtacaata aaagatatgt atgaatgcat cagtagctga 950
 aaaaaaaaaa aaa 963

<210> 424
 <211> 229
 <212> PRT
 <213> Homo sapiens

<400> 424
 Met Gln Asp Glu Asp Gly Tyr Ile Thr Leu Asn Ile Lys Thr Arg
 1 5 10 15
 Lys Pro Ala Leu Val Ser Val Gly Pro Ala Ser Ser Ser Trp Trp
 20 25 30
 Arg Val Met Ala Leu Ile Leu Leu Ile Leu Cys Val Gly Met Val
 35 40 45
 Val Gly Leu Val Ala Leu Gly Ile Trp Ser Val Met Gln Arg Asn
 50 55 60
 Tyr Leu Gln Asp Glu Asn Glu Asn Arg Thr Gly Thr Leu Gln Gln
 65 70 75
 Leu Ala Lys Arg Phe Cys Gln Tyr Val Val Lys Gln Ser Glu Leu
 80 85 90
 Lys Gly Thr Phe Lys Gly His Lys Cys Ser Pro Cys Asp Thr Asn
 95 100 105
 Trp Arg Tyr Tyr Gly Asp Ser Cys Tyr Gly Phe Phe Arg His Asn
 110 115 120
 Leu Thr Trp Glu Glu Ser Lys Gln Tyr Cys Thr Asp Met Asn Ala

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 125 | | 130 | | 135 |
| Thr Leu Leu Lys | Ile Asp Asn Arg Asn | Ile Val Glu Tyr Ile | Lys | | |
| | 140 | 145 | 150 | | |
| Ala Arg Thr His | Leu Ile Arg Trp Val | Gly Leu Ser Arg Gln | Lys | | |
| | 155 | 160 | 165 | | |
| Ser Asn Glu Val | Trp Lys Trp Glu Asp | Gly Ser Val Ile Ser | Glu | | |
| | 170 | 175 | 180 | | |
| Asn Met Phe Glu | Phe Leu Glu Asp Gly | Lys Gly Asn Met Asn | Cys | | |
| | 185 | 190 | 195 | | |
| Ala Tyr Phe His | Asn Gly Lys Met His | Pro Thr Phe Cys Glu | Asn | | |
| | 200 | 205 | 210 | | |
| Lys His Tyr Leu | Met Cys Glu Arg Lys | Ala Gly Met Thr Lys | Val | | |
| | 215 | 220 | 225 | | |
| Asp Gln Leu Pro | | | | | |

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 <211> 24
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 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 425
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<210> 426
 <211> 26
 <212> DNA
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<220>
 <223> Synthetic oligonucleotide probe

<400> 426
 ctgagataac cgagccatcc tcccac 26

<210> 427
 <211> 49
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 427
 gcttcctgac actaaggctg tctgctagtc agaattgcct caaaaagag 49

<210> 428
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 428
 ccaccaatgg cagccccacc t 21

 <210> 429
 <211> 17
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 429
 gactgccctc cctgcca 17

 <210> 430
 <211> 24
 <212> DNA
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 <220>
 <223> Synthetic oligonucleotide probe

 <400> 430
 caaaaagcct ggaagtcttc aaag 24

 <210> 431
 <211> 20
 <212> DNA
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 <220>
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 <400> 431
 cagctggact gcaggtgcta 20

 <210> 432
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 432
 cagtgagcac agcaagtgtc ct 22

 <210> 433
 <211> 28
 <212> DNA
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 <220>
 <223> Synthetic oligonucleotide probe

 <400> 433
 ggccacctcc ttgagtcttc agttccct 28

 <210> 434
 <211> 24
 <212> DNA
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<220>
 <223> Synthetic oligonucleotide probe

 <400> 434
 caactactgg ctaaagctgg tgaa 24

 <210> 435
 <211> 27
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 435
 cctttctgta taggtgatac ccaatga 27

 <210> 436
 <211> 24
 <212> DNA
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 <220>
 <223> Synthetic oligonucleotide probe

 <400> 436
 tggccatccc taccagaggc aaaa 24

 <210> 437
 <211> 22
 <212> DNA
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 <220>
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 <400> 437
 ctgaagacga cgcggttac ta 22

 <210> 438
 <211> 19
 <212> DNA
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 <220>
 <223> Synthetic oligonucleotide probe

 <400> 438
 ggcagaaatg ggaggcaga 19

 <210> 439
 <211> 30
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 439
 tgctctgttg gctacggctt tagtcctag 30

 <210> 440
 <211> 22

<212> DNA
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 <220>
 <223> Synthetic oligonucleotide probe

 <400> 440
 agcagcagcc atgtagaatg aa 22

 <210> 441
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 441
 aatacgaaca gtgcacgctg at 22

 <210> 442
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 442
 tccagagagc caagcacggc aga 23

 <210> 443
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 443
 tctagccagc ttggctccaa ta 22

 <210> 444
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 444
 cctggctcta gcaccaactc ata 23

 <210> 445
 <211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 445
 tcagtggccc taaggagatg ggcct 25

<210> 446
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 446
 caggatacag tgggaatctt gaga 24

 <210> 447
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 447
 cctgaagggc ttggagctta gt 22

 <210> 448
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 448
 tctttggcca tttcccatgg ctca 24

 <210> 449
 <211> 18
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 449
 cccatggcga ggaggaat 18

 <210> 450
 <211> 19
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 450
 tgcgtacgtg tgccttcag 19

 <210> 451
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

<400> 451
 cagcacccca ggcagtctgt gtgt 24

 <210> 452
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 452
 aacgtgctac acgaccagtg tact 24

 <210> 453
 <211> 27
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 453
 cacagcatat tcagatgact aaatcca 27

 <210> 454
 <211> 31
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 454
 ttgttttagtt ctccaccgtg tctccacaga a 31

 <210> 455
 <211> 21
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 <220>
 <223> Synthetic oligonucleotide probe

 <400> 455
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 <210> 456
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 456
 tgatgtgcct ggctcagaac 20

 <210> 457
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

 <400> 457
 tgcacctaga tgtccccagc accc 24

 <210> 458
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 458
 aagatgcgcc aggcttctta 20

 <210> 459
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 459
 ctctgtacg gtctgtcac ttat 24

 <210> 460
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 460
 tggctgtcag tccagtgtgc atgg 24

 <210> 461
 <211> 29
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 461
 gcatagggat agataagatc ctgctttat 29

 <210> 462
 <211> 27
 <212> DNA
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 <400> 462
 caaattaaag taccatcag gagagaa 27

 <210> 463
 <211> 37

<212> DNA
 <213> Artificial Sequence

 <220>
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 <400> 463
 aagttgctaa atatatacat tatctgcgcc aagtcca 37

 <210> 464
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 <212> DNA
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 <220>
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 <400> 464
 gtgctgcca caattcatga 20

 <210> 465
 <211> 26
 <212> DNA
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 <220>
 <223> Synthetic oligonucleotide probe

 <400> 465
 gtccttggtgta tgggtctgaa ttatat 26

 <210> 466
 <211> 31
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 466
 actctctgca cccacagtc accactatct c 31

 <210> 467
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 467
 ctgaggaacc agccatgtct ct 22

 <210> 468
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 468
 gaccagatgc aggtacagga tga 23

<210> 469
 <211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 469
 ctgccccttc agtgatgcca acctt 25

 <210> 470
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 470
 ggggtggaggc tcactgagta ga 22

 <210> 471
 <211> 28
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 471
 caatacaggt aatgaaactc tgcttctt 28

 <210> 472
 <211> 36
 <212> DNA
 <213> Artificial Sequence

 <220>
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 <400> 472
 tcctcttaag cataggccat tttctcagtt tagaca 36

 <210> 473
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 473
 ggtggtcttg cttggtctca c 21

 <210> 474
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

<400> 474
 ccgtcgttca gcaacatgac 20

 <210> 475
 <211> 20
 <212> DNA
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 <220>
 <223> Synthetic oligonucleotide probe

 <400> 475
 accgcctacc gctgtgcca 20

 <210> 476
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 <400> 476
 cagtaaaacc acaggctgga ttt 23

 <210> 477
 <211> 24
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 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 477
 cctgagagca agaaggttga gaat 24

 <210> 478
 <211> 22
 <212> DNA
 <213> Artificial Sequence

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 <223> Synthetic oligonucleotide probe

 <400> 478
 tagacaggga ccatggcccg ca 22

 <210> 479
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 479
 tgggctgtag aagagttgtt g 21

 <210> 480
 <211> 20
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 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

 <400> 480
 tccacacttg gccagtttat 20

 <210> 481
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
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 <400> 481
 cccaacttct cccttttgga ccct 24

 <210> 482
 <211> 24
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 <213> Artificial Sequence

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 <400> 482
 gtcccttcac tgttttagagc atga 24

 <210> 483
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 483
 actctcccc tcaacagcct cctgag 26

 <210> 484
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 484
 gtggtcaggg cagatccttt 20

 <210> 485
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 485
 acagatccag gagagactcc aca 23

 <210> 486
 <211> 21

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 486
 agcggcgctc ccagcctgaa t 21

 <210> 487
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 487
 catgattggc cctcagttcc atc 23

 <210> 488
 <211> 20
 <212> DNA
 <213> Artificial Sequence

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 <223> Synthetic oligonucleotide probe

 <400> 488
 atagagggct cccagaagtg 20

 <210> 489
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 489
 cagggccttc agggccttca c 21

 <210> 490
 <211> 19
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 490
 gctcagccaa acactgtca 19

 <210> 491
 <211> 17
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 491
 ggggccctga cagtgtt 17

<210> 492
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 492
ctgagccgag actggagcat ctacac 26

<210> 493
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 493
gtgggcagcg tcttgctc 17

<210> 494
<211> 1231
<212> DNA
<213> Homo Sapien

<400> 494
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ccgcgatccc ggcccggggc tgtggcgctg actccgaccc aggcagccag 100
cagcccgcgc gggagccgga ccgcccccg aggagctcgg acggcatgct 150
gagccccctc ctttgctgaa gcccgagtgc ggagaagccc gggcaaacgc 200
aggctaagga gaccaaagcg gcgaagtcgc gagacagcgg acaagcagcg 250
gaggagaagg aggaggaggc gaaccagag aggggcagca aaagaagcgg 300
tggtggtggg cgtcgtggcc atggcggcgg ctatcgccag ctcgctcatc 350
cgtcagaaga ggcaagcccg cgagcgcgag aaatccaacg cctgcaagtg 400
tgtcagcagc ccagcaaaag gcaagaccag ctgcgacaaa aacaagttaa 450
atgtcttttc cgggtcaaaa ctcttcggct ccaagaagag gcgcagaaga 500
agaccagagc ctcagcttaa gggatatagt accaagctat acagccgaca 550
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caacgtagcc agtgagggca aaagaagggc tctgtaacag aaccttacct 1100
ccagggtgctg ttgaattctt ctagcagtc ttcacccaaa agttcaaatt 1150
tgtcagtgac atttaccaaa caaacaggca gagttcacta ttctatctgc 1200
cattagacct tottatcatc cataactaaag c 1231

<210> 495
<211> 245
<212> PRT
<213> Homo Sapien

<400> 495
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20 25 30
Pro Ser Lys Gly Lys Thr Ser Cys Asp Lys Asn Lys Leu Asn Val
35 40 45
Phe Ser Arg Val Lys Leu Phe Gly Ser Lys Lys Arg Arg Arg Arg
50 55 60
Arg Pro Glu Pro Gln Leu Lys Gly Ile Val Thr Lys Leu Tyr Ser
65 70 75
Arg Gln Gly Tyr His Leu Gln Leu Gln Ala Asp Gly Thr Ile Asp
80 85 90
Gly Thr Lys Asp Glu Asp Ser Thr Tyr Thr Leu Phe Asn Leu Ile
95 100 105
Pro Val Gly Leu Arg Val Val Ala Ile Gln Gly Val Gln Thr Lys
110 115 120
Leu Tyr Leu Ala Met Asn Ser Glu Gly Tyr Leu Tyr Thr Ser Glu
125 130 135
Leu Phe Thr Pro Glu Cys Lys Phe Lys Glu Ser Val Phe Glu Asn
140 145 150
Tyr Tyr Val Thr Tyr Ser Ser Met Ile Tyr Arg Gln Gln Gln Ser
155 160 165
Gly Arg Gly Trp Tyr Leu Gly Leu Asn Lys Glu Gly Glu Ile Met
170 175 180
Lys Gly Asn His Val Lys Lys Asn Lys Pro Ala Ala His Phe Leu
185 190 195
Pro Lys Pro Leu Lys Val Ala Met Tyr Lys Glu Pro Ser Leu His
200 205 210
Asp Leu Thr Glu Phe Ser Arg Ser Gly Ser Gly Thr Pro Thr Lys

| | | | | | |
|---|-----|--|-----|--|-----|
| | 215 | | 220 | | 225 |
| Ser Arg Ser Val Ser Gly Val Leu Asn Gly Gly Lys Ser Met Ser | | | | | |
| | 230 | | 235 | | 240 |
| His Asn Glu Ser Thr | | | | | |
| | 245 | | | | |

<210> 496
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 <212> DNA
 <213> Homo Sapien

<400> 496
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 gagccctgtc ttactgaacc tgggcaacct ggatattctg agacatattt 150
 tggggggatt tcagtgaaaa aagtggggga tccctccat ttagagtgtg 200
 gcaaaggaaa aaacaccaag gttgggttcc ttctgacat tggcagtgcc 250
 ccagtagggg tgggatgagc gaatattccc aaagctaaag tccacacccc 300
 tgtagattac aagagtggat ttggcaggag tgtgccccaa aatacagtgg 350
 aaaggtgcct gaagatattt aaaccacgtc ttggaaaattt agtgggtctt 400
 ggctttggga taggtgaagt gaggacagac actggagagg agggaaaggg 450
 gacgttttca ataggaggca aaactcgagg gtgggatcca ctgaggagta 500
 cataggctgc tggatctggt ggagccagca ctggggccac ggggtggtaac 550
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 cctagtgagc gggctcctct gggggagccc agcgcgctcc gggcgctgc 700
 cggtttgggg gtgtctcctc ccggggcgct atggcggcgc tggccagtag 750
 cctgatccgg cagaagcggg aggtccgcga gcccgggggc agccggccgg 800
 tgtcggcgca gcggcgctg tgtccccgcg gcaccaagtc cctttgccag 850
 aagcagctcc tcatcctgct gtccaagggt cgactgtgcg gggggcggcc 900
 cgcgcgcccg gaccgcgcc cgagaccta gctcaaaggc atcgtcacca 950
 aactgttctg ccgccagggt ttctacctcc aggcgaatcc cgacggaagc 1000
 atccagggca cccagagga taccagctcc ttcacctact tcaacctgat 1050
 ccctgtgggc ctccgtgtgg tcaccatcca gagcgccaag ctgggtcact 1100
 acatggccat gaatgctgag ggactgctct acagttcgcc gcatttcaca 1150
 gctgagtgtc gctttaagga gtgtgtcttt gagaattact acgtcctgta 1200
 cgctctgct ctctaccgcc agcgtcgttc tggccgggcc tggtaacctg 1250

gcctggacaa ggagggccag gtcataaagg gaaaccgagt taagaagacc 1300
aaggcagctg ccacttttct gcccaagctc ctggaggtgg ccatgtacca 1350
ggagccttct ctccacagtg tccccgaggc ctcccccttc agtccccctg 1400
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<210> 497
<211> 225
<212> PRT
<213> Homo Sapien

<400> 497

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Ala | Leu | Ala | Ser | Ser | Leu | Ile | Arg | Gln | Lys | Arg | Glu | Val | 1 | 5 | 10 | 15 |
| Arg | Glu | Pro | Gly | Gly | Ser | Arg | Pro | Val | Ser | Ala | Gln | Arg | Arg | Val | 20 | 25 | 30 | |
| Cys | Pro | Arg | Gly | Thr | Lys | Ser | Leu | Cys | Gln | Lys | Gln | Leu | Leu | Ile | 35 | 40 | 45 | |
| Leu | Leu | Ser | Lys | Val | Arg | Leu | Cys | Gly | Gly | Arg | Pro | Ala | Arg | Pro | 50 | 55 | 60 | |
| Asp | Arg | Gly | Pro | Glu | Pro | Gln | Leu | Lys | Gly | Ile | Val | Thr | Lys | Leu | 65 | 70 | 75 | |
| Phe | Cys | Arg | Gln | Gly | Phe | Tyr | Leu | Gln | Ala | Asn | Pro | Asp | Gly | Ser | 80 | 85 | 90 | |
| Ile | Gln | Gly | Thr | Pro | Glu | Asp | Thr | Ser | Ser | Phe | Thr | His | Phe | Asn | 95 | 100 | 105 | |
| Leu | Ile | Pro | Val | Gly | Leu | Arg | Val | Val | Thr | Ile | Gln | Ser | Ala | Lys | 110 | 115 | 120 | |
| Leu | Gly | His | Tyr | Met | Ala | Met | Asn | Ala | Glu | Gly | Leu | Leu | Tyr | Ser | 125 | 130 | 135 | |
| Ser | Pro | His | Phe | Thr | Ala | Glu | Cys | Arg | Phe | Lys | Glu | Cys | Val | Phe | 140 | 145 | 150 | |
| Glu | Asn | Tyr | Tyr | Val | Leu | Tyr | Ala | Ser | Ala | Leu | Tyr | Arg | Gln | Arg | 155 | 160 | 165 | |
| Arg | Ser | Gly | Arg | Ala | Trp | Tyr | Leu | Gly | Leu | Asp | Lys | Glu | Gly | Gln | 170 | 175 | 180 | |
| Val | Met | Lys | Gly | Asn | Arg | Val | Lys | Lys | Thr | Lys | Ala | Ala | Ala | His | 185 | 190 | 195 | |
| Phe | Leu | Pro | Lys | Leu | Leu | Glu | Val | Ala | Met | Tyr | Gln | Glu | Pro | Ser | 200 | 205 | 210 | |
| Leu | His | Ser | Val | Pro | Glu | Ala | Ser | Pro | Ser | Ser | Pro | Pro | Ala | Pro | 215 | 220 | 225 | |

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<211> 744

<212> DNA
<213> Homo Sapien

<400> 498
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gcaagaaccg cgggctctgc aacggcaacc tggtgatat cttctccaaa 150
gtgcgcatct tgggcctcaa gaagcgagg ttgcggcgcc aagatcccca 200
gctcaagggg atagtgaaca ggttatattg caggcaaggc tactacttgc 250
aaatgcaccc cgatggagct ctgatggaa ccaaggatga cagcactaat 300
tctacactct tcaacctcat accagtggga ctacgtgttg ttgccatcca 350
gggagtga aaacagggtgt atatagccat gaatggagaa gggtacctct 400
acccatcaga actttttacc cctgaatgca agtttaaaga atctgttttt 450
gaaaattatt atgtaatcta ctcatccatg ttgtacagac aacaggaatc 500
tggtagagcc tgggttttgg gattaaataa ggaagggcaa gctatgaaag 550
ggaacagagt aaagaaaacc aaaccagcag ctcattttct acccaagcca 600
ttggaagttg ccatgtaccg agaaccatct ttgcatgatg ttggggaaac 650
gggtcccgaag cctgggggtga cgccaagtaa aagcacaagt gcgtctgcaa 700
taatgaatgg aggcaaacca gtcaacaaga gtaagacaac atag 744

<210> 499
<211> 247
<212> PRT
<213> Homo Sapien

<400> 499
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20 25 30
Ser Ser Pro Ser Lys Asn Arg Gly Leu Cys Asn Gly Asn Leu Val
35 40 45
Asp Ile Phe Ser Lys Val Arg Ile Phe Gly Leu Lys Lys Arg Arg
50 55 60
Leu Arg Arg Gln Asp Pro Gln Leu Lys Gly Ile Val Thr Arg Leu
65 70 75
Tyr Cys Arg Gln Gly Tyr Tyr Leu Gln Met His Pro Asp Gly Ala
80 85 90
Leu Asp Gly Thr Lys Asp Asp Ser Thr Asn Ser Thr Leu Phe Asn
95 100 105
Leu Ile Pro Val Gly Leu Arg Val Val Ala Ile Gln Gly Val Lys
110 115 120

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Gly | Leu | Tyr | Ile | Ala | Met | Asn | Gly | Glu | Gly | Tyr | Leu | Tyr | Pro |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ser | Glu | Leu | Phe | Thr | Pro | Glu | Cys | Lys | Phe | Lys | Glu | Ser | Val | Phe |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Glu | Asn | Tyr | Tyr | Val | Ile | Tyr | Ser | Ser | Met | Leu | Tyr | Arg | Gln | Gln |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Glu | Ser | Gly | Arg | Ala | Trp | Phe | Leu | Gly | Leu | Asn | Lys | Glu | Gly | Gln |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Ala | Met | Lys | Gly | Asn | Arg | Val | Lys | Lys | Thr | Lys | Pro | Ala | Ala | His |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Phe | Leu | Pro | Lys | Pro | Leu | Glu | Val | Ala | Met | Tyr | Arg | Glu | Pro | Ser |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Leu | His | Asp | Val | Gly | Glu | Thr | Val | Pro | Lys | Pro | Gly | Val | Thr | Pro |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ser | Lys | Ser | Thr | Ser | Ala | Ser | Ala | Ile | Met | Asn | Gly | Gly | Lys | Pro |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Val | Asn | Lys | Ser | Lys | Thr | Thr | | | | | | | | |
| | | | | 245 | | | | | | | | | | |

<210> 500
 <211> 2906
 <212> DNA
 <213> Homo Sapien

<400> 500
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 tggaaccgaa cgcaatggat aaactgattg tgcaagagag aaggaagaac 150
 gaagcttttt cttgtgagcc ctggatctta acacaaatgt gtatatgtgc 200
 acacagggag cattcaagaa tgaaataaac cagagttaga cccgcggggg 250
 ttggtgtggt ctgacataaa taaataatct taaagcagct gttcccctcc 300
 ccacccccaa aaaaaaggat gattggaaat gaagaaccga ggattcacia 350
 agaaaaaagt atgttcattt ttctctataa aggagaaagt gagccaagga 400
 gatatttttg gaatgaaaag tttggggcct ttttagtaaa gtaaagaact 450
 ggtgtggtgg tgttttcott tctttttgaa tttcccacia gaggagagga 500
 aattaataat acatctgcaa agaaatttca gagaagaaaa gttgaccgcg 550
 gcagattgag gcattgattg ggggagagaa accagcagag cacagttgga 600
 tttgtgccta tgttgactaa aattgacgga taattgcagt tggatttttc 650
 ttcacaaacc tccttttttt taaattttta ttccttttgg tatcaagatc 700
 atgcgttttc tcttgttctt aaccacctgg atttccatct ggatgttgct 750

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ccaacttgag gtatttgaac cttgccatgt gcaaccttcg ggaaatccct 1450
aacctcacac cgctcataaa actagatgag ctggatcttt ctgggaatca 1500
tttatctgcc atcaggcctg gctctttcca gggtttgatg caccttcaaa 1550
aactgtggat gatacagtc cagattcaag tgattgaacg gaatgccttt 1600
gacaaccttc agtcactagt ggagatcaac ctggcacaca ataataaac 1650
attactgoot catgacctct tcaactccctt gcatcatcta gagcggatac 1700
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 tgactgggct aaatctactg tttcaaaaaa gtgtctttac aaaaaaacia 2850
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<210> 501
 <211> 640
 <212> PRT
 <213> Homo Sapien

<400> 501
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 20 25 30
 Leu Ala Leu Gln Leu Leu Val Val Ala Gly Leu Val Arg Ala Gln
 35 40 45
 Thr Cys Pro Ser Val Cys Ser Cys Ser Asn Gln Phe Ser Lys Val
 50 55 60
 Ile Cys Val Arg Lys Asn Leu Arg Glu Val Pro Asp Gly Ile Ser
 65 70 75
 Thr Asn Thr Arg Leu Leu Asn Leu His Glu Asn Gln Ile Gln Ile
 80 85 90
 Ile Lys Val Asn Ser Phe Lys His Leu Arg His Leu Glu Ile Leu
 95 100 105
 Gln Leu Ser Arg Asn His Ile Arg Thr Ile Glu Ile Gly Ala Phe
 110 115 120
 Asn Gly Leu Ala Asn Leu Asn Thr Leu Glu Leu Phe Asp Asn Arg
 125 130 135
 Leu Thr Thr Ile Pro Asn Gly Ala Phe Val Tyr Leu Ser Lys Leu
 140 145 150
 Lys Glu Leu Trp Leu Arg Asn Asn Pro Ile Glu Ser Ile Pro Ser
 155 160 165

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| Tyr | Ala | Phe | Asn | Arg 170 | Ile | Pro | Ser | Leu | Arg 175 | Arg | Leu | Asp | Leu | Gly 180 |
| Glu | Leu | Lys | Arg | Leu 185 | Ser | Tyr | Ile | Ser | Glu 190 | Gly | Ala | Phe | Glu | Gly 195 |
| Leu | Ser | Asn | Leu | Arg 200 | Tyr | Leu | Asn | Leu | Ala 205 | Met | Cys | Asn | Leu | Arg 210 |
| Glu | Ile | Pro | Asn | Leu 215 | Thr | Pro | Leu | Ile | Lys 220 | Leu | Asp | Glu | Leu | Asp 225 |
| Leu | Ser | Gly | Asn | His 230 | Leu | Ser | Ala | Ile | Arg 235 | Pro | Gly | Ser | Phe | Gln 240 |
| Gly | Leu | Met | His | Leu 245 | Gln | Lys | Leu | Trp | Met 250 | Ile | Gln | Ser | Gln | Ile 255 |
| Gln | Val | Ile | Glu | Arg 260 | Asn | Ala | Phe | Asp | Asn 265 | Leu | Gln | Ser | Leu | Val 270 |
| Glu | Ile | Asn | Leu | Ala 275 | His | Asn | Asn | Leu | Thr 280 | Leu | Leu | Pro | His | Asp 285 |
| Leu | Phe | Thr | Pro | Leu 290 | His | His | Leu | Glu | Arg 295 | Ile | His | Leu | His | His 300 |
| Asn | Pro | Trp | Asn | Cys 305 | Asn | Cys | Asp | Ile | Leu 310 | Trp | Leu | Ser | Trp | Trp 315 |
| Ile | Lys | Asp | Met | Ala 320 | Pro | Ser | Asn | Thr | Ala 325 | Cys | Cys | Ala | Arg | Cys 330 |
| Asn | Thr | Pro | Pro | Asn 335 | Leu | Lys | Gly | Arg | Tyr 340 | Ile | Gly | Glu | Leu | Asp 345 |
| Gln | Asn | Tyr | Phe | Thr 350 | Cys | Tyr | Ala | Pro | Val 355 | Ile | Val | Glu | Pro | Pro 360 |
| Ala | Asp | Leu | Asn | Val 365 | Thr | Glu | Gly | Met | Ala 370 | Ala | Glu | Leu | Lys | Cys 375 |
| Arg | Ala | Ser | Thr | Ser 380 | Leu | Thr | Ser | Val | Ser 385 | Trp | Ile | Thr | Pro | Asn 390 |
| Gly | Thr | Val | Met | Thr 395 | His | Gly | Ala | Tyr | Lys 400 | Val | Arg | Ile | Ala | Val 405 |
| Leu | Ser | Asp | Gly | Thr 410 | Leu | Asn | Phe | Thr | Asn 415 | Val | Thr | Val | Gln | Asp 420 |
| Thr | Gly | Met | Tyr | Thr 425 | Cys | Met | Val | Ser | Asn 430 | Ser | Val | Gly | Asn | Thr 435 |
| Thr | Ala | Ser | Ala | Thr 440 | Leu | Asn | Val | Thr | Ala 445 | Ala | Thr | Thr | Thr | Pro 450 |
| Phe | Ser | Tyr | Phe | Ser 455 | Thr | Val | Thr | Val | Glu 460 | Thr | Met | Glu | Pro | Ser 465 |
| Gln | Asp | Glu | Ala | Arg 470 | Thr | Thr | Asp | Asn | Asn 475 | Val | Gly | Pro | Thr | Pro 480 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Val | Asp | Trp | Glu | Thr | Thr | Asn | Val | Thr | Thr | Ser | Leu | Thr | Pro |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Gln | Ser | Thr | Arg | Ser | Thr | Glu | Lys | Thr | Phe | Thr | Ile | Pro | Val | Thr |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Asp | Ile | Asn | Ser | Gly | Ile | Pro | Gly | Ile | Asp | Glu | Val | Met | Lys | Thr |
| | | | | 515 | | | | | 520 | | | | | 525 |
| Thr | Lys | Ile | Ile | Ile | Gly | Cys | Phe | Val | Ala | Ile | Thr | Leu | Met | Ala |
| | | | | 530 | | | | | 535 | | | | | 540 |
| Ala | Val | Met | Leu | Val | Ile | Phe | Tyr | Lys | Met | Arg | Lys | Gln | His | His |
| | | | | 545 | | | | | 550 | | | | | 555 |
| Arg | Gln | Asn | His | His | Ala | Pro | Thr | Arg | Thr | Val | Glu | Ile | Ile | Asn |
| | | | | 560 | | | | | 565 | | | | | 570 |
| Val | Asp | Asp | Glu | Ile | Thr | Gly | Asp | Thr | Pro | Met | Glu | Ser | His | Leu |
| | | | | 575 | | | | | 580 | | | | | 585 |
| Pro | Met | Pro | Ala | Ile | Glu | His | Glu | His | Leu | Asn | His | Tyr | Asn | Ser |
| | | | | 590 | | | | | 595 | | | | | 600 |
| Tyr | Lys | Ser | Pro | Phe | Asn | His | Thr | Thr | Thr | Val | Asn | Thr | Ile | Asn |
| | | | | 605 | | | | | 610 | | | | | 615 |
| Ser | Ile | His | Ser | Ser | Val | His | Glu | Pro | Leu | Leu | Ile | Arg | Met | Asn |
| | | | | 620 | | | | | 625 | | | | | 630 |
| Ser | Lys | Asp | Asn | Val | Gln | Glu | Thr | Gln | Ile | | | | | |
| | | | | 635 | | | | | 640 | | | | | |

<210> 502
 <211> 2458
 <212> DNA
 <213> Homo Sapien

<400> 502
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 ccagctcgcc cgaggtccgt cggaggcgcc cggccgcccc ggagccaagc 150
 agcaactgag cggggaagcg cccgcgtccg gggatcgga tgtccctcct 200
 ccttctctc ttgctagttt cctactatgt tggaaccttg gggactcaca 250
 ctgagatcaa gagagtggca gaggaaaagg tcactttgcc ctgccaccat 300
 caactggggc ttccagaaaa agacactctg gatattgaat ggctgctcac 350
 cgataatgaa gggaaccaa aagtggatgat cacttactcc agtcgtcatg 400
 tctacaataa cttgactgag gaacagaagg gccgagtggc ctttgcttcc 450
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 aaccaccctg gacgagttct gctgcagaat cttaccatgt cctactctgg 800
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<210> 503
<211> 373
<212> PRT
<213> Homo Sapien

<400> 503
Met Ser Leu Leu Leu Leu Leu Leu Val Ser Tyr Tyr Val Gly
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20 25 30
Val Thr Leu Pro Cys His His Gln Leu Gly Leu Pro Glu Lys Asp
35 40 45
Thr Leu Asp Ile Glu Trp Leu Leu Thr Asp Asn Glu Gly Asn Gln
50 55 60
Lys Val Val Ile Thr Tyr Ser Ser Arg His Val Tyr Asn Asn Leu
65 70 75
Thr Glu Glu Gln Lys Gly Arg Val Ala Phe Ala Ser Asn Phe Leu
80 85 90
Ala Gly Asp Ala Ser Leu Gln Ile Glu Pro Leu Lys Pro Ser Asp
95 100 105
Glu Gly Arg Tyr Thr Cys Lys Val Lys Asn Ser Gly Arg Tyr Val
110 115 120
Trp Ser His Val Ile Leu Lys Val Leu Val Arg Pro Ser Lys Pro
125 130 135
Lys Cys Glu Leu Glu Gly Glu Leu Thr Glu Gly Ser Asp Leu Thr
140 145 150
Leu Gln Cys Glu Ser Ser Ser Gly Thr Glu Pro Ile Val Tyr Tyr
155 160 165
Trp Gln Arg Ile Arg Glu Lys Glu Gly Glu Asp Glu Arg Leu Pro
170 175 180
Pro Lys Ser Arg Ile Asp Tyr Asn His Pro Gly Arg Val Leu Leu
185 190 195
Gln Asn Leu Thr Met Ser Tyr Ser Gly Leu Tyr Gln Cys Thr Ala
200 205 210
Gly Asn Glu Ala Gly Lys Glu Ser Cys Val Val Arg Val Thr Val
215 220 225

| | | | |
|---|-----|-----|-----|
| Gln Tyr Val Gln Ser Ile Gly Met Val Ala Gly Ala Val Thr Gly | 230 | 235 | 240 |
| Ile Val Ala Gly Ala Leu Leu Ile Phe Leu Leu Val Trp Leu Leu | 245 | 250 | 255 |
| Ile Arg Arg Lys Asp Lys Glu Arg Tyr Glu Glu Glu Glu Arg Pro | 260 | 265 | 270 |
| Asn Glu Ile Arg Glu Asp Ala Glu Ala Pro Lys Ala Arg Leu Val | 275 | 280 | 285 |
| Lys Pro Ser Ser Ser Ser Ser Ser Gly Ser Arg Ser Ser Arg Ser Gly | 290 | 295 | 300 |
| Ser Ser Ser Thr Arg Ser Thr Ala Asn Ser Ala Ser Arg Ser Gln | 305 | 310 | 315 |
| Arg Thr Leu Ser Thr Asp Ala Ala Pro Gln Pro Gly Leu Ala Thr | 320 | 325 | 330 |
| Gln Ala Tyr Ser Leu Val Gly Pro Glu Val Arg Gly Ser Glu Pro | 335 | 340 | 345 |
| Lys Lys Val His His Ala Asn Leu Thr Lys Ala Glu Thr Thr Pro | 350 | 355 | 360 |
| Ser Met Ile Pro Ser Gln Ser Arg Ala Phe Gln Thr Val | 365 | 370 | |

<210> 504
 <211> 3060
 <212> DNA
 <213> Homo Sapien

<400> 504
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 ctctgtgctg gagtagtgga tttcgccaga agtttgagta tcactactcc 150
 tgaagagatg attgaaaaag ccaaagggga aactgcctat ctgccatgca 200
 aatttacgct tagtcccga gaccaggac cgctggacat cgagtggctg 250
 atatcaccag ctgataatca gaaggtggat caagtgatta ttttatattc 300
 tggagacaaa atttatgatg actactatcc agatctgaaa ggccgagtac 350
 attttacgag taatgatctc aaatctggtg atgcatcaat aaatgtaacg 400
 aatttacaac tgtcagatat tggcacatat cagtgcacaa tgaaaaaagc 450
 tcctggtggt gcaaataaga agattcatct ggtagttctt gttaagcctt 500
 caggtgctgag atgttacgtt gatggatctg aagaaattgg aagtgacttt 550
 aagataaaat gtgaacacaa agaaggttca cttccattac agtatgagtg 600
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acatacagct gtacagtcag aaacagagtg ggctctgac agtgccctgtt 750
gcgtctaaac gttgtccctc cttcaaataa agctggacta attgcaggag 800
ccattatagg aactttgctt gctctagcgc tcattggctt tatcatcttt 850
tgctgtcgta aaaagcgcag agaagaaaaa tatgaaaagg aagttcatca 900
cgatatcagg gaagatgtgc cacctccaaa gagccgtacg tccactgcca 950
gaagctacat cggcagtaat cattcatccc tgggggtccat gtctccttcc 1000
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ctttgaacgc actcctcaga gtccgactct cccacctgct aagttcaagt 1100
acccttacia gactgatgga attacagttg tataaatatg gactactgaa 1150
gaatctgaag tattgtatta ttgacttta ttttaggcct ctagtaaaga 1200
cttaaagtgt ttttaaaaaa agcacaaggc acagagatta gagcagctgt 1250
aagaacacat ctactttatg caatggcatt agacatgtaa gtcagatgtc 1300
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gaaaagtatg gttaatagtt gatttttcaa aggaaatfff aaaattotta 1500
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cataaagtaa attctcaaag gtgctagaac aaatcgtcca cttctacagt 1750
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tatcaatata taaagtgc atatttttta agaaagatta ttctcaataa 1900
cttctataaa aataagtttg atggtttggc ccatctaact tcactactat 1950
tagtaagaac ttttaacttt taatgtgtag taaggtttat tctacctttt 2000
totcaacatg acaccaacac aatcaaaaac gaagttagtg aggtgctaac 2050
atgtgaggat taatccagtg attccggtca caatgcattc caggaggagg 2100
taccatgtc actggaattg ggogatatgg tttatttttt cttccctgat 2150
ttggataacc aaatggaaca ggaggaggat agtgattctg atggccattc 2200
cctcgatata ttcttggtt ttttttgggc aaagggtgcc acattggaag 2250
aggtggaaat ataagttctg aaatctgtag ggaagagaac acattaagtt 2300

| | | | | | |
|-----------------|---------------------|-------------------------|-----|--|-----|
| | 125 | | 130 | | 135 |
| Val Val Leu Val | Lys Pro Ser Gly Ala | Arg Cys Tyr Val Asp Gly | | | |
| | 140 | 145 | | | 150 |
| Ser Glu Glu Ile | Gly Ser Asp Phe Lys | Ile Lys Cys Glu Pro Lys | | | |
| | 155 | 160 | | | 165 |
| Glu Gly Ser Leu | Pro Leu Gln Tyr Glu | Trp Gln Lys Leu Ser Asp | | | |
| | 170 | 175 | | | 180 |
| Ser Gln Lys Met | Pro Thr Ser Trp Leu | Ala Glu Met Thr Ser Ser | | | |
| | 185 | 190 | | | 195 |
| Val Ile Ser Val | Lys Asn Ala Ser Ser | Glu Tyr Ser Gly Thr Tyr | | | |
| | 200 | 205 | | | 210 |
| Ser Cys Thr Val | Arg Asn Arg Val Gly | Ser Asp Gln Cys Leu Leu | | | |
| | 215 | 220 | | | 225 |
| Arg Leu Asn Val | Val Pro Pro Ser Asn | Lys Ala Gly Leu Ile Ala | | | |
| | 230 | 235 | | | 240 |
| Gly Ala Ile Ile | Gly Thr Leu Leu Ala | Leu Ala Leu Ile Gly Leu | | | |
| | 245 | 250 | | | 255 |
| Ile Ile Phe Cys | Cys Arg Lys Lys Arg | Arg Glu Glu Lys Tyr Glu | | | |
| | 260 | 265 | | | 270 |
| Lys Glu Val His | His Asp Ile Arg Glu | Asp Val Pro Pro Pro Lys | | | |
| | 275 | 280 | | | 285 |
| Ser Arg Thr Ser | Thr Ala Arg Ser Tyr | Ile Gly Ser Asn His Ser | | | |
| | 290 | 295 | | | 300 |
| Ser Leu Gly Ser | Met Ser Pro Ser Asn | Met Glu Gly Tyr Ser Lys | | | |
| | 305 | 310 | | | 315 |
| Thr Gln Tyr Asn | Gln Val Pro Ser Glu | Asp Phe Glu Arg Thr Pro | | | |
| | 320 | 325 | | | 330 |
| Gln Ser Pro Thr | Leu Pro Pro Ala Lys | Phe Lys Tyr Pro Tyr Lys | | | |
| | 335 | 340 | | | 345 |
| Thr Asp Gly Ile | Thr Val Val | | | | |
| | 350 | | | | |

<210> 506
 <211> 1705
 <212> DNA
 <213> Homo Sapien

<400> 506
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 ccagctgcct ccaggcagcc agccctcaag catcaottac aggaccagag 150
 ggacaagaca tgactgtgat gaggagctgc tttcgccaat ttaacaccaa 200
 gaagaattga ggctgcttgg gaggaaggcc aggaggaaca cgagactgag 250

agatgaattt tcaacagagg ctgcaaagcc tgtggacttt agccagaccc 300
 ttctgccctc ctttgctggc gacagcctct caaatgcaga tggttgtgct 350
 cccttgccctg ggtttttaccc tgcttctctg gagccaggta tcaggggccc 400
 agggccaaga attccacttt gggccctgcc aagtgaaggg ggttgttccc 450
 cagaaactgt ggggaagcctt ctgggctgtg aaagacacta tgcaagctca 500
 ggataacatc acgagtgcctt ggctgctgca gcaggagggt ctgcagaacg 550
 tctcggatgc tgagagctgt taccttgtcc acaccctgct ggagttctac 600
 ttgaaaactg ttttcaaaaa ccaccacaat agaacagttg aagtcaggac 650
 tctgaagtca ttctctactc tggccaacaa ctttgttctc atcgtgtcac 700
 aactgcaacc cagtcaagaa aatgagatgt tttccatcag agacagtgc 750
 cacaggcggg ttctgctatt ccggagagca ttcaaacagt tggacgtaga 800
 agcagctctg accaaagccc ttggggaagt ggacattctt ctgacctgga 850
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 tggcactggg ttgttccctg tgtcatttca aacagtctcc cttcctatgc 950
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 ggattattgt caaagaagtc attctttaag cagcgccagt gacagtcagg 1050
 gaaggtgcct ctggatgctg tgaagagtct acagagaaga ttcttgtatt 1100
 tattacaact ctatttaatt aatgtcagta tttcaactga agttctat 1150
 atttgtgaga ctgtaagtta catgaaggca gcagaatatt gtgccccatg 1200
 cttctttacc cctcacaatc cttgccacag tgtggggcag tggatgggtg 1250
 cttagtaagt acttaataaa ctgtggtgct ttttttggcc tgtctttgga 1300
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 atgaaaatca cactgtcttc tgatatctgc agggacagag cattgggggtg 1400
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 aaaaa 1705

<210> 507
 <211> 206
 <212> PRT

<213> Homo Sapien

<400> 507

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Pro Phe Cys Pro Pro Leu Leu Ala Thr Ala Ser Gln Met Gln Met
20 25 30
Val Val Leu Pro Cys Leu Gly Phe Thr Leu Leu Leu Trp Ser Gln
35 40 45
Val Ser Gly Ala Gln Gly Gln Glu Phe His Phe Gly Pro Cys Gln
50 55 60
Val Lys Gly Val Val Pro Gln Lys Leu Trp Glu Ala Phe Trp Ala
65 70 75
Val Lys Asp Thr Met Gln Ala Gln Asp Asn Ile Thr Ser Ala Arg
80 85 90
Leu Leu Gln Gln Glu Val Leu Gln Asn Val Ser Asp Ala Glu Ser
95 100 105
Cys Tyr Leu Val His Thr Leu Leu Glu Phe Tyr Leu Lys Thr Val
110 115 120
Phe Lys Asn His His Asn Arg Thr Val Glu Val Arg Thr Leu Lys
125 130 135
Ser Phe Ser Thr Leu Ala Asn Asn Phe Val Leu Ile Val Ser Gln
140 145 150
Leu Gln Pro Ser Gln Glu Asn Glu Met Phe Ser Ile Arg Asp Ser
155 160 165
Ala His Arg Arg Phe Leu Leu Phe Arg Arg Ala Phe Lys Gln Leu
170 175 180
Asp Val Glu Ala Ala Leu Thr Lys Ala Leu Gly Glu Val Asp Ile
185 190 195
Leu Leu Thr Trp Met Gln Lys Phe Tyr Lys Leu
200 205

<210> 508

<211> 924

<212> DNA

<213> Homo Sapien

<400> 508

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cgggtctcagg agatgtctga tttccacaga catgcaccat atagaagaga 150
gtttccaaga aatcaaaaaga gccatccaag ctaaggacac ottcccaa 200
gtcactatcc tgtccacatt ggagactctg cagatcatta agcocttaga 250
tgtgtgctgc gtgaccaaga acctcctggc gttctacgtg gacaggggtg 300

tcaaggatca tcaggagcca aacccccaaaa tcttgagaaa aatcagcagc 350
 attgccaaact ctttcctcta catgcagaaa actctgcggc aatgtcagga 400
 acagaggcag tgtcactgca ggcaggaagc caccaatgcc accagagtca 450
 tccatgacaa ctatgatcag ctggaggtcc acgctgctgc cattaaatcc 500
 ctgggagagc tcgacgtctt tctagcctgg attaataaga atcatgaagt 550
 aatgtttctca gottgatgac aaggaacctg tatagtgatc cagggatgaa 600
 caccacctgt gcggtttact gtgggagaca gcccaccttg aaggggaagg 650
 agatggggaa ggcccccttg agctgaaagt cccactggct ggcctcaggc 700
 tgtcttattc cgcttgaaaa taggcaaaaa gtctactgtg gtatttgtaa 750
 taaactctat ctgctgaaag ggcctgcagg ccatcctggg agtaaagggc 800
 tgccttccca tctaatttat tgtaaagtca tatagtccat gtctgtgatg 850
 tgagccaagt gatatcctgt agtacacatt gtactgagtg gtttttctga 900
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<210> 509

<211> 177

<212> PRT

<213> Homo Sapien

<400> 509

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Lys | Leu | Gln | Cys | Val | Ser | Leu | Trp | Leu | Leu | Gly | Thr | Ile | Leu | 1 | 5 | 10 | 15 |
| Ile | Leu | Cys | Ser | Val | Asp | Asn | His | Gly | Leu | Arg | Arg | Cys | Leu | Ile | 20 | 25 | 30 | |
| Ser | Thr | Asp | Met | His | His | Ile | Glu | Glu | Ser | Phe | Gln | Glu | Ile | Lys | 35 | 40 | 45 | |
| Arg | Ala | Ile | Gln | Ala | Lys | Asp | Thr | Phe | Pro | Asn | Val | Thr | Ile | Leu | 50 | 55 | 60 | |
| Ser | Thr | Leu | Glu | Thr | Leu | Gln | Ile | Ile | Lys | Pro | Leu | Asp | Val | Cys | 65 | 70 | 75 | |
| Cys | Val | Thr | Lys | Asn | Leu | Leu | Ala | Phe | Tyr | Val | Asp | Arg | Val | Phe | 80 | 85 | 90 | |
| Lys | Asp | His | Gln | Glu | Pro | Asn | Pro | Lys | Ile | Leu | Arg | Lys | Ile | Ser | 95 | 100 | 105 | |
| Ser | Ile | Ala | Asn | Ser | Phe | Leu | Tyr | Met | Gln | Lys | Thr | Leu | Arg | Gln | 110 | 115 | 120 | |
| Cys | Gln | Glu | Gln | Arg | Gln | Cys | His | Cys | Arg | Gln | Glu | Ala | Thr | Asn | 125 | 130 | 135 | |
| Ala | Thr | Arg | Val | Ile | His | Asp | Asn | Tyr | Asp | Gln | Leu | Glu | Val | His | 140 | 145 | 150 | |
| Ala | Ala | Ala | Ile | Lys | Ser | Leu | Gly | Glu | Leu | Asp | Val | Phe | Leu | Ala | | | | |

155

160

165

Trp Ile Asn Lys Asn His Glu Val Met Phe Ser Ala
170 175

<210> 510

<211> 996

<212> DNA

<213> Homo Sapien

<400> 510

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cacatacgat ttaggtgaca ctatagaata acatccactt tgcctttctc 150
tccacaggtg tccactccca ggtccaactg cacctcgggt ctatcgataa 200
tctcagcacc agccactcag agcagggcac gatgttgggg gcccgccctca 250
ggctctgggt ctgtgccttg tgcagcgtct gcagcatgag cgtcctcaga 300
gcctatccca atgcctcccc actgctcggc tccagctggg gtggcctgat 350
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agaatggcca tgtggatggc gcaccccatc agaccatcta cagtgccttg 450
atgatcagat cagaggatgc tggctttgtg gtgattacag gtgtgatgag 500
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atttcgaccc ggagaactgc aggttccaac accagacgct ggaaaacggg 600
tacgacgtct accactctcc tcagtatcac ttcttggtca gtctgggccg 650
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tcctgtcccg gaggaacgag atccccctaa ttcacttcaa ccccccata 750
ccacggcggc acacccggag cgccgaggac gactcggagc gggaccccct 800
gaacgtgctg aagccccggg cccggatgac cccggccccg gcctcctgtt 850
cacaggagct cccgagcgcc gaggacaaca gcccgatggc cagtgaccca 900
ttaggggtgg tcaggggccc tcgagtgaac acgcacgctg ggggaacggg 950
cccgaaggc tgccgcccct tcgccaagtt catctagggt cgctgg 996

<210> 511

<211> 251

<212> PRT

<213> Homo Sapien

<400> 511

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Val Cys Ser Met Ser Val Leu Arg Ala Tyr Pro Asn Ala Ser Pro
20 25 30

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 acatctccca acttcatggt gctgatcgcc acctccgtgg agacatcagc 400
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| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Ala | Tyr | Lys | Glu | Lys | Gly | His | Ser | Gln | Ser | Ser | Gln | Phe | Ser | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ser | Asp | Gln | Glu | Ile | Ala | His | Leu | Leu | Pro | Glu | Asn | Val | Ser | Ala | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Leu | Pro | Ala | Thr | Val | Ala | Val | Ala | Ser | Pro | His | Thr | Thr | Ser | Ala | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Thr | Pro | Lys | Pro | Ala | Thr | Leu | Leu | Pro | Thr | Asn | Ala | Ser | Val | Thr | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Pro | Ser | Gly | Thr | Ser | Gln | Pro | Gln | Leu | Ala | Thr | Thr | Ala | Pro | Pro | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Val | Thr | Thr | Val | Thr | Ser | Gln | Pro | Pro | Thr | Thr | Leu | Ile | Ser | Thr | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Val | Phe | Thr | Arg | Ala | Ala | Ala | Thr | Leu | Gln | Ala | Met | Ala | Thr | Thr | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ala | Val | Leu | Thr | Thr | Thr | Phe | Gln | Ala | Pro | Thr | Asp | Ser | Lys | Gly | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Ser | Leu | Glu | Thr | Ile | Pro | Phe | Thr | Glu | Ile | Ser | Asn | Leu | Thr | Leu | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Asn | Thr | Gly | Asn | Val | Tyr | Asn | Pro | Thr | Ala | Leu | Ser | Met | Ser | Asn | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Val | Glu | Ser | Ser | Thr | Met | Asn | Lys | Thr | Ala | Ser | Trp | Glu | Gly | Arg | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Glu | Ala | Ser | Pro | Gly | Ser | Ser | Ser | Gln | Gly | Ser | Val | Pro | Glu | Asn | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Gln | Tyr | Gly | Leu | Pro | Phe | Glu | Lys | Trp | Leu | Leu | Ile | Gly | Ser | Leu | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Leu | Phe | Gly | Val | Leu | Phe | Leu | Val | Ile | Gly | Leu | Val | Leu | Leu | Gly | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Arg | Ile | Leu | Ser | Glu | Ser | Leu | Arg | Arg | Lys | Arg | Tyr | Ser | Arg | Leu | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Asp | Tyr | Leu | Ile | Asn | Gly | Ile | Tyr | Val | Asp | Ile | | | | | |
| | | | | 425 | | | | | 430 | | | | | | |

<210> 516
 <211> 2749
 <212> DNA
 <213> Homo Sapien

<220>
 <221> unsure
 <222> 1869, 1887
 <223> unknown base

<400> 516
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 ttgcctgctg ctcccaggtt atgaagccct ggagggccca gaggaaatca 100

gcggggttcga aggggacact gtgtccctgc agtgcaccta caggggaagag 150
ctgaggggacc accggaagta ctggtgcagg aagggtggga tcctcttctc 200
tcgctgctct ggcaccatct atgcagaaga agaaggccag gagacaatga 250
agggcaggggt gtccatccgt gacagccgcc aggagctctc gctcattgtg 300
accctgtgga acctcaccct gcaagacgct ggggagtact ggtgtgggggt 350
cgaaaaacgg ggccccgatg agtctttact gatctctctg ttctgttttc 400
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tcctgcaggg agtcccgc ccccatgca gctggactcc acctcagcag 700
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gtcagccgca ggccctgatc ccttctgcag ccacctgctc ctgtggagaa 850
aggaagctca acaggccacg gagacacaga ggaacgagaa gttctggctc 900
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 35 40 45
 His Arg Lys Tyr Trp Cys Arg Lys Gly Gly Ile Leu Phe Ser Arg
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 Cys Ser Gly Thr Ile Tyr Ala Glu Glu Glu Gly Gln Glu Thr Met
 65 70 75

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Lys | Gly | Arg | Val | Ser | Ile | Arg | Asp | Ser | Arg | Gln | Glu | Leu | Ser | Leu | |
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| Ile | Val | Thr | Leu | Trp | Asn | Leu | Thr | Leu | Gln | Asp | Ala | Gly | Glu | Tyr | |
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| Trp | Cys | Gly | Val | Glu | Lys | Arg | Gly | Pro | Asp | Glu | Ser | Leu | Leu | Ile | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Ser | Leu | Phe | Val | Phe | Pro | Gly | Pro | Cys | Cys | Pro | Pro | Ser | Pro | Ser | |
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| Pro | Thr | Phe | Gln | Pro | Leu | Ala | Thr | Thr | Arg | Leu | Gln | Pro | Lys | Ala | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Lys | Ala | Gln | Gln | Thr | Gln | Pro | Pro | Gly | Leu | Thr | Ser | Pro | Gly | Leu | |
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| Tyr | Pro | Ala | Ala | Thr | Thr | Ala | Lys | Gln | Gly | Lys | Thr | Gly | Ala | Glu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Ala | Pro | Pro | Leu | Pro | Gly | Thr | Ser | Gln | Tyr | Gly | His | Glu | Arg | Thr | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ser | Gln | Tyr | Thr | Gly | Thr | Ser | Pro | His | Pro | Ala | Thr | Ser | Pro | Pro | |
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| Ala | Gly | Ser | Ser | Arg | Pro | Pro | Met | Gln | Leu | Asp | Ser | Thr | Ser | Ala | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Glu | Asp | Thr | Ser | Pro | Ala | Leu | Ser | Ser | Gly | Ser | Ser | Lys | Pro | Arg | |
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| Val | Ser | Ile | Pro | Met | Val | Arg | Ile | Leu | Ala | Pro | Val | Leu | Val | Leu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Leu | Ser | Leu | Leu | Ser | Ala | Ala | Gly | Leu | Ile | Ala | Phe | Cys | Ser | His | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Leu | Leu | Leu | Trp | Arg | Lys | Glu | Ala | Gln | Gln | Ala | Thr | Glu | Thr | Gln | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Arg | Asn | Glu | Lys | Phe | Trp | Leu | Ser | Arg | Leu | Thr | Ala | Glu | Glu | Lys | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Glu | Ala | Pro | Ser | Gln | Ala | Pro | Glu | Gly | Asp | Val | Ile | Ser | Met | Pro | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Pro | Leu | His | Thr | Ser | Glu | Glu | Glu | Leu | Gly | Phe | Ser | Lys | Phe | Val | |
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